bordignon trading

Cilindri all'azoto per stampi

Nitrogen gas springs for dies

True quality lives in time
La vera qualità si esprime nel tempo

NANOTECH
RUN-tech and X-tech series

25 years
made in italy 100%

L'azienda Bordignon

Bordignon company

Active since 1958, Bordignon was the first company producing springs for molds and nitrogen gas springs to have obtained the UNI EN ISO 9002 certificate for the implementation of the Quality System to its production process, totally inside the company and controlled at every stage, from the acceptance of raw materials to the storage of the finished product.

Besides commitment to quality, the company adds the constant search for innovative solutions to provide specific answers to the most diverse use conditions.

Attiva dal 1958, Bordignon è stata la prima realtà produttrice di molle per stampi e cilindri all'azoto ad aver ottenuto la Certificazione UNI-EN ISO 9002 per l'applicazione del Sistema Qualità al suo processo produttivo, totalmente interno e controllato in ogni fase, dall'accettazione delle materie prime sino allo stoccaggio del prodotto finito.

All'impegno sulla qualità l'azienda aggiunge la costante ricerca di soluzioni innovative per fornire risposte specifiche alle più diverse condizioni di utilizzo.

SERVICE AND TECHNOLOGICAL CREATIVITY: BORDIGNON MAKES THE DIFFERENCE

Taking care of the customer needs is the starting point for Bordignon research, which is aimed at offering customized nitrogen gas springs in a market characterized by standard solutions. That's how dedicated products, perfect blends of nano-technologies and new materials synthesis, are designed to ensure safety and reliability over time, generating quality in the production processes in which they are involved.

Safety, research and development, production with no outsourcing, quality, big stock for quick delivery, have always been the points of strength of the Bordignon company.

SERVIZIO E CREATIVITÀ TECNOLOGICA: COSÌ BORDIGNON FA LA DIFFERENZA

Dal confronto con le esigenze dei propri clienti, Bordignon trae i motivi della sua ricerca, tesa a proporre cilindri personalizzati in un mercato caratterizzato da soluzioni standard. Nascono così prodotti ad hoc, perfetti insiemi di nano-tecnologie e nuovi materiali di sintesi, pensati per assicurare sicurezza nelle prestazioni e affidabilità nel tempo, generatori di qualità nei processi produttivi in cui vengono coinvolti.

Sicurezza, ricerca e sviluppo, produzione senza outsourcing, qualità, grande disponibilità a magazzino per consegne veloci, contraddistinguono da sempre l'azienda Bordignon.

BORDIGNON
BORDIGNON
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BORDIGNON
BORDIGNON
BORDIGNON

Cilindri all'azoto per stampi, programma di produzione

Nitrogen gas springs for dies

Production program

NITROGEN GAS SPRINGS FOR DIES:

- 2 series of self-contained gas springs with nano-technology: CSX, SMLX;
- 5 series of self-contained gas springs: C, CSM, TOP, CISO, CVDI;
- not self-contained gas springs for connection to an open system;
- gas springs without valve for connection to plate (OV);
- gas springs for MANIFOLD systems;
- high temperature gas springs (up to 200°C / 392°F);
- slow-return gas springs on request;
- timed gas springs on request;
- special gas springs on request;
- lifters charged with nitrogen (EG).

- lifters with wire spring (EM).

CILINDRI ALL'AZOTO PER STAMPI:

- *2 serie di cilindri autonomi con nano-tecnologia: CSX, SMLX;*
- *5 serie di cilindri autonomi: C, CSM, TOP, CISO, CVDI;*
- *cilindri non autonomi per collegamento a sistema;*
- *cilindri senza valvola per collegamento a piastra (OV);*
- *cilindri non autonomi per piastra forata (MANIFOLD);*
- *cilindri per alta temperatura (fino a 200°C / 392°F);*
- *cilindri rallentati a richiesta;*
- *cilindri temporizzati a richiesta;*
- *cilindri speciali a richiesta;*
- *espulsori caricati con azoto (EG).*

- *espulsori a molla (EM).*

NANOTECH
RUN-tech and X-tech series

25 years
made in italy 100%

Safety & reliability

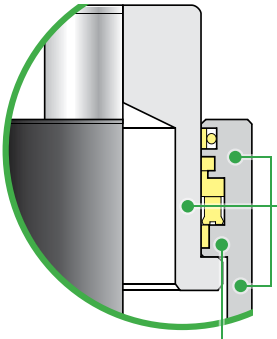
Our points of strength

SAFETY

Bordignon nitrogen gas springs have always been built with single ('monolithic') thick mechanical components, in order to ensure product integrity and maximum user's safety even under the most extreme wrong use conditions (collisions, etc.). The piston rod is blocked by a thick mechanical stop inside the cylinder body.

SICUREZZA

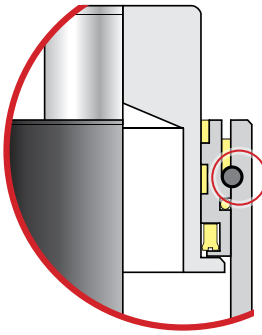
Da sempre i cilindri all'azoto Bordignon sono costruiti con componenti meccanici singoli ("monolitici") di elevato spessore, per garantire l'integrità del prodotto e la massima sicurezza per l'utilizzatore anche nelle più estreme condizioni di errato utilizzo (collisioni, ecc.). Lo stelo è bloccato da un fermo meccanico di elevato spessore all'interno del corpo del cilindro.



SINGLE 'MONOLITHIC' COMPONENTS
BORDIGNON CONSTRUCTION
SINGOLI COMPONENTI "MONOLITICI"
COSTRUZIONE BORDIGNON

MORE THAN
DOUBLE THICKNESS
SPESSORE
PIU' CHE DOPPIO

PISTON ROD THICK
MECHANICAL STOP
SPESSO FERMO MECCANICO
DELLO STELO



SEVERAL ASSEMBLED COMPONENTS
OTHER CONSTRUCTIONS
VARI COMPONENTI ASSEMBLATI
ALTRE COSTRUZIONI

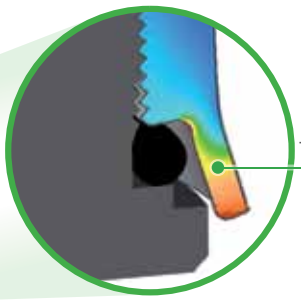
GROOVE FOR LOCK RING
SENSIBLY REDUCES THICKNESS
LA SEDE PER L'ANELLO
DI BLOCCAGGIO RIDUCE
SENSIBILMENTE LO SPESSORE

Bordignon nitrogen gas springs have always been built with a safety system for both internal over-pressure and over-stroke: the cylinder body metal wall is thinner at the bottom and gets deformed in such critical conditions, allowing a safe gas spring discharge.

Da sempre i cilindri all'azoto Bordignon sono realizzati con un sistema di sicurezza in caso di extra-corsa o di pressione interna eccessiva: la parete metallica del corpo del cilindro è più sottile alla base e si deforma in tali condizioni critiche, consentendo lo scaricamento del cilindro in sicurezza.

PROBLEM 1: EXCESSIVE STROKE
COLLISION AGAINST THE GAS SPRING
PROBLEMA 1: CORSA ECCESSIVA
COLLISIONE CONTRO IL CILINDRO

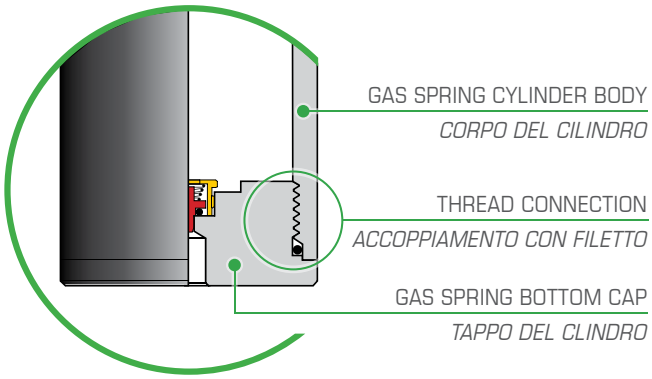
PROBLEM 2: EXCESSIVE PRESSURE
INSIDE THE GAS SPRING
PROBLEMA 2: PRESSIONE ECCESSIVA
ALL'INTERNO DEL CILINDRO



METAL WALL DEFORMATION LEADS
TO SAFE DISCHARGE IN BOTH CASES
LA DEFORMAZIONE DELLA PARETE
METALLICA PORTA ALLO
SCARICAMENTO IN SICUREZZA
IN ENTRAMBI I CASI

Bordignon gas spring components are coupled through thread connections, for the highest possible safety. Thread connections are standard in high pressure equipment around the world, such as waterjet cutting nozzles and ultra high pressure vessels (~10000 bar).

I componenti dei cilindri Bordignon sono assemblati tramite filetti, per assicurare la massima sicurezza possibile. Accoppiamenti tramite filetti sono uno standard su apparecchiature ad alta pressione in tutto il mondo, come ad esempio ugelli per il taglio ad acqua e recipienti a pressione ultra-elevata (~10000 bar).



PERFORMANCE

PRESTAZIONI

All Bordignon nitrogen gas springs (except for the TOP series) are self-lubricated, thanks to a solid lubricant (PATENT PENDING).

Tutti i cilindri all'azoto Bordignon (tranne la serie TOP) sono autolubrificati, grazie a un lubrificante solido (PATENT PENDING).

Potenza e compattezza, i nostri punti di forza

Power & compactness

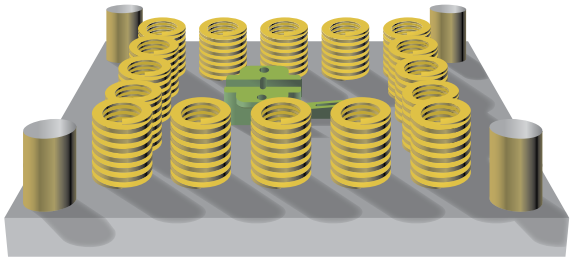
Our points of strength

POWER & COMPACTNESS

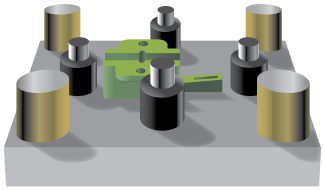
Bordignon produces various series of nitrogen gas springs, for every dimensional demand. Other than our ISO 11901 nitrogen gas spring line (Bordignon CISO series), we offer many other higher-performance models, with forces up to +300% higher and with much more compact dimensions.

POTENZA E COMPATTEZZA

Bordignon produce diverse serie di cilindri all'azoto, per qualsiasi esigenza dimensionale. Oltre alla nostra serie di cilindri all'azoto a norma ISO 11901 (serie Bordignon CISO), offriamo molti altri modelli dalle prestazioni più elevate, con forze fino al +300% maggiori e con dimensioni molto più compatte.



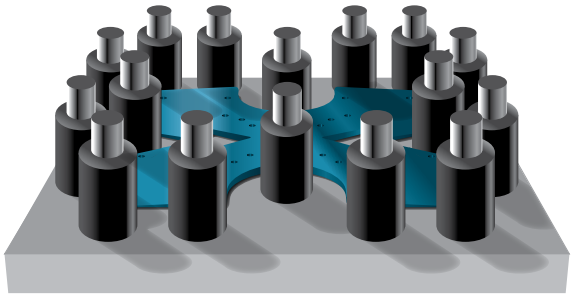
WIRE SPRINGS (LOW POWER)
MOLLE A FILO (FORZA CONTENUTA)



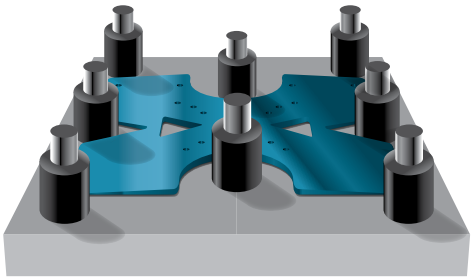
GAS SPRINGS (HIGH POWER)
CILINDRI ALL'AZOTO (FORZA ELEVATA)

Reduction of die size translates into cost reduction and higher productivity, with advantages for both the die-maker and the die-user.

La riduzione delle dimensioni dello stampo si traduce in riduzione dei costi e migliore produttività, con vantaggi sia per lo stampista che per lo stampatore.



ISO 11901 GAS SPRINGS (BIG SIZE, LOW POWER)
CILINDRI ISO 11901 (INGOMBRO ELEVATO, FORZA CONTENUTA)



BORDIGNON HIGHER-POWER GAS SPRINGS (COMPACT SIZE, HIGH POWER)
CILINDRI BORDIGNON CON FORZA INCREMENTATA (DIMENSIONI COMPATTE, FORZA ELEVATA)

Qualità certificata

Certified quality

The Bordignon nitrogen gas springs are designed and built to guarantee the longest service life: they are the end result of many years of experience, research and innovative technology rewarded by the UNI EN ISO 9001 CERTIFICATION. More than 600 nitrogen gas springs have been standardized and listed in this catalogue: they're in stock for immediate delivery, charged and ready for use.
Bordignon also produces tailor made nitrogen gas springs on request.

THE BORDIGNON NITROGEN GAS SPRINGS, IF PROPERLY USED, WILL LAST MORE THAN 100.000.000 mm OF TOTAL STROKE.

I cilindri Bordignon sono affidabili e durano a lungo poiché sono il risultato di anni d'esperienza, ricerca e innovazione, premiate dalla CERTIFICAZIONE UNI-EN ISO 9001.
Il catalogo presenta oltre 600 cilindri autonomi già caricati e pronti all'uso, normalmente a magazzino per una rapida consegna.
A richiesta vengono forniti cilindri e sistemi di cilindri non standard.

SE CORRETTAMENTE USATI, I CILINDRI BORDIGNON HANNO UNA DURATA DI OLTRE 100.000.000 mm DI CORSA TOTALE.

ITALCERT

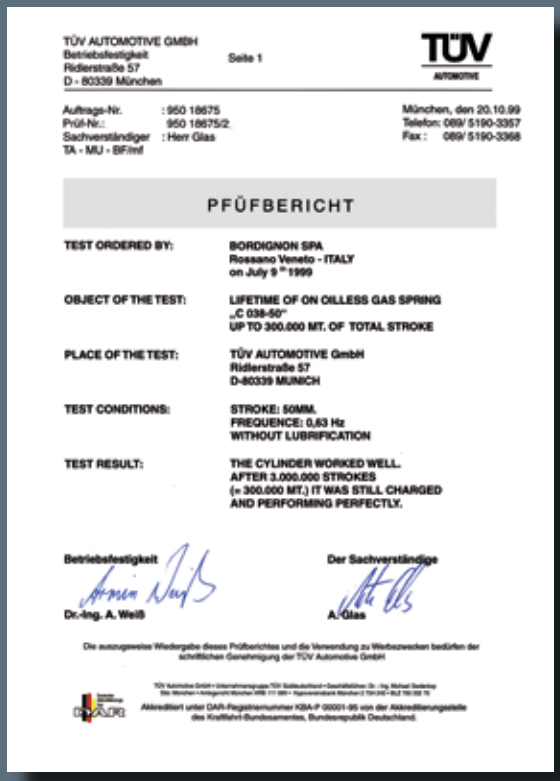
CERTIFICATO N° 009SGQ03

Si certifica che il
Sistema di Gestione per la Qualità
messo in atto da
BORDIGNON SILVANO S.r.l.
Via A.Volta, 2 - IT 36028 ROSSANO VENETO (VI)
nella Sede Operativa di
Zona Industriale - IT 38055 GRIGNO (TN)
è conforme alla norma
UNI EN ISO 9001:2008 (ISO 9001:2008)
per i seguenti Processi
Progettazione e fabbricazione di cilindri e serbatoi all'azoto, espulsori e manifold
Design, production of nitrogen cylinders and tanks, ejectors and manifold

IL PRESIDENTE
prof. dr. Carlo Tribone

Data 1 rilascio 1995-07-19 | Data di Rinnovo 2011-10-16 | Data di scadenza 2014-10-15

ACCREDIA



TÜV AUTOMOTIVE GMBH
Betriebsfestigkeit
Ridlerstraße 57
D - 80339 München

Seite 1

TÜV AUTOMOTIVE

Auftrags-Nr. : 950 18675
Prüf-Nr.: 950 18675/2
Sachverständiger : Herr Glas
TA - MU - BFInf

München, den 20.10.99
Telefon: 089/ 5190-3357
Fax : 089/ 5190-3368

PFÜFBERICHT

TEST ORDERED BY:	BORDIGNON SPA Rossano Veneto - ITALY on July 9 TH 1999
OBJECT OF THE TEST:	LIFETIME OF ON CILLESS GAS SPRING „C 038-50" UP TO 300.000 MT. OF TOTAL STROKE
PLACE OF THE TEST:	TÜV AUTOMOTIVE GmbH Ridlerstraße 57 D-80339 MUNICH
TEST CONDITIONS:	STROKE: 50MM. FREQUENCE: 0,63 Hz WITHOUT LUBRIFICATION
TEST RESULT:	THE CYLINDER WORKED WELL. AFTER 3.000.000 STROKES (= 300.000 MT.) IT WAS STILL CHARGED AND PERFORMING PERFECTLY.

Betriebsfestigkeit
Dr.-Ing. A. Weiß

Der Sachverständige
A. Glas

Die auszugsweise Wiedergabe dieses Prüfberichtes und die Verwendung zu Werbezwecken bedürfen der schriftlichen Genehmigung der TÜV Automotive GmbH

Akkreditiert unter DAR-Registriernummer KBA-P 00001-95 von der Akkreditierungsstelle des Kraftfahrt-Bundesamtes, Bundesrepublik Deutschland.

SYSTEM CERTIFICATION
UNI EN ISO 9001
ITALCERT®

RoHS 2002/95/EC

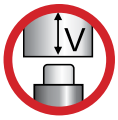
PED in accordance with 97/23/EC

NANOTECH
RUN-tech and X-tech series

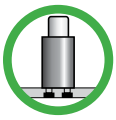
25 years made in Italy 100%

Use instructions

no

	No side forces. Work stroke always perpendicular to the base of the nitrogen gas spring.	*No forze laterali. Corsa di lavoro perpendicolare alla base del cilindro.*
	Avoid scratching and scoring on the piston rod.	*Non scalfire o rigare lo stelo.*
	Do not make mechanical work on the nitrogen gas spring.	*Non eseguire lavorazioni meccaniche sul cilindro.*
	Do not disassemble the nitrogen gas spring. Maintenance only by authorized people.	*Non smontare il cilindro. Manutenzione solo da personale autorizzato.*
	Max impact and max release speed: 1 m/s (TOP series: 0.5 m/s).	*Massima velocità d'impatto e di rilascio: 1 m/s (serie TOP: 0,5 m/s).*
	Do not freely release the piston rod. The piston rod goes up together with the press.	*Non rilasciare liberamente lo stelo. Accompagnarlo con la pressa.*
	Protect against liquid or solid contaminants. The nitrogen gas springs are protected against contaminants by scraper ring (except for the TOP series, EG series, CISO19 and CISO25 models). Do not use chemical products with low flash point (petrol, solvents, alcohol, etc.). Clean only with a dry cloth.	*Proteggere da emulsioni di stampaggio, detergenti, acqua e polveri. I cilindri sono protetti da contaminanti con raschiastelo di protezione (tranne le serie TOP e EG e i modelli CISO19 e CISO25). Non usare prodotti chimici con basso flash point (benzine, solventi, alcool, ecc.). Pulire solo con un panno asciutto.*

yes



Always fasten the nitrogen gas spring at the base to a flat and clean support surface with high resistance screws.

Gas springs with more than one threaded hole at the base: the center hole is for charging/discharging only. Use all the other holes at the base for fixing.

Fissare sempre il cilindro alla base con viti ad alta resistenza su superficie piana e pulita.

Cilindri con più di un foro filettato alla base: il foro centrale è adibito al solo caricamento/scaricamento. Usare tutti gli altri fori alla base per il fissaggio.

Charge only with NITROGEN (N_2).

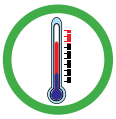
Caricare solo con AZOTO (N_2).

Hole for cylinder body Ø + 1mm.
Draining hole for liquids.

Foro per cilindro Ø +1 mm.
Foro di scarico per liquidi.

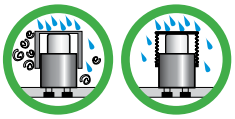
Lubricate the piston rod with grease with disulfide molybdenum (MoS_2).

Lubrificare lo stelo con grasso con bisolfuro di molibdeno (MoS_2).



Operating temperature:
MIN 0°C (32°F) - MAX 80°C (176°F)
Do not heat.

Temperatura di lavoro:
MIN 0°C (32°F) - MAX 80°C (176°F)
Non riscaldare.



Protect against liquid contaminants by a polimeric bellow, solid contaminants by a metal bellow.

Proteggere da emulsioni di stampaggio, detergenti e acqua con soffietto polimerico, da polveri con soffietto metallico.

Information

- » Stroke available at 100%
- » You might adjust the initial force with the charging and discharging set (model COMPL)
- » Charging pressure: MIN 30 bar - MAX see table
- » How to calculate the charging pressure (bar) for initial forces (daN) lower than $F_{\text{initial in table}}$:

$$\text{Charging pressure (bar)} = \frac{\text{F (daN)} \times \text{max charging pressure (bar)}}{F_{\text{initial in table}}}$$

- » How to calculate the force (daN) at intermediate strokes:

$$F = F_{\text{initial}} + \frac{\text{intermediate stroke}}{\text{max stroke}} \times (F_{\text{final}} - F_{\text{initial}})$$

- » *Corsa utilizzabile al 100%*
- » *Forza iniziale regolabile con il set di carico e scarico (modello COMPL)*
- » *Pressione di carico: MIN 30 bar - MAX vedere tabella*
- » *Calcolo della pressione di carico (bar) per forze iniziali (daN) minori della $F_{\text{iniziale in tabella}}$:*

$$\text{Pressione di carico (bar)} = \frac{F\ (daN) \times \text{pressione massima di carico (bar)}}{F_{\text{iniziale in tabella}}}$$

- » *Calcolo della forza (daN) a corse intermedie:*

$$F = F_{\text{iniziale}} + \frac{\text{corsa intermedia}}{\text{corsa massima}} \times (F_{\text{finale}} - F_{\text{iniziale}})$$

Nano-tecnologia

Nano-technology RUN-tech and X-tech

Patent pending

NANOTECH
RUN-tech and X-tech series

Both nano-technologies **RUN-tech** and **X-tech** are present on the models CSX and SMLX. The nano-technology **RUN-tech** allows to double the self-lubrificated SPM. The advantage for the die-user is to halve the time of each batch production and of the work-in-press time. The nano-technology **X-tech** allows to increase, in a considerable way, the nitrogen gas springs durability in case of piston rod stroke not perpendicular to the base*. The tests were performed with strokes up to 80 mm. The advantage for the die-user and for the die-maker is the elimination of production-stops because of press-die manufacture anomalies or use anomalies.

*Entrambe le nano-tecnologie **RUN-tech** e **X-tech** sono presenti sui modelli CSX e SMLX. La nano-tecnologia **RUN-tech** permette di raddoppiare gli SPM senza lubrificazione. Il vantaggio per l'utilizzatore è il dimezzamento del tempo di ogni lotto di produzione e di impegno pressa. La nano-tecnologia **X-tech** permette di incrementare, in modo notevole, la durata dei cilindri in caso di corsa dello stelo non perpendicolare alla base*. Sono stati testati cilindri con corse fino a 80 mm. Il vantaggio per l'utilizzatore e lo stampista è l'eliminazione dei fermi di produzione dovuti ad anomalie costruttive o di utilizzo dello stampo.*

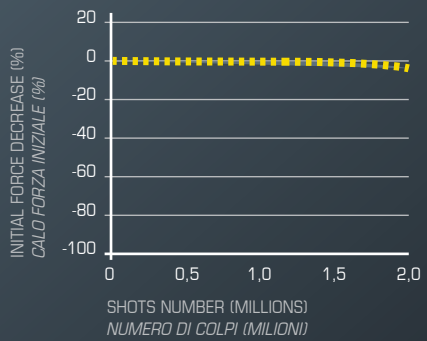
* The nitrogen gas springs with the nano-technology **X-tech** passed the durability test of 1 Million shots with piston rod eccentricity of 1° (1.76 mm / 100 mm). The nitrogen gas springs proper use is with piston rod stroke perpendicular to the base and with the nitrogen gas springs fixed at the base. The durability is longer with piston rod stroke perpendicular to the base.

** Con la nano-tecnologia **X-tech** i cilindri hanno superato il test di 1 milione di colpi con inclinazione dello stelo pari a 1° (1,76 mm / 100 mm). L'utilizzo corretto dei cilindri è con corsa dello stelo perpendicolare alla base e con i cilindri fissati alla base. La durata è maggiore con corsa perpendicolare alla base.*

RUNTECH

Durability test result / *Risultato dei test di durata*

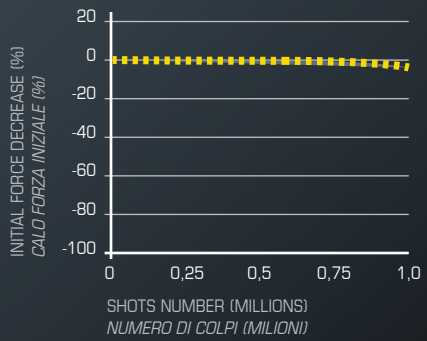
MODEL *MODELLO*	STROKE *CORSA*	SHOTS NUMBER *NUMERO DI COLPI*	INCLINATION *INCLINAZIONE*
CSX 19-25	25 mm	200 spm	0°
SMLX 25-25	25 mm	200 spm	0°



XTECH

Durability test result / *Risultato dei test di durata*

MODEL *MODELLO*	STROKE *CORSA*	SHOTS NUMBER *NUMERO DI COLPI*	INCLINATION *INCLINAZIONE*
CSX 32-50	48 mm	50 spm	1° (1,76 mm / 100 mm)
SMLX 38-38	35 mm	70 spm	1° (1,76 mm / 100 mm)



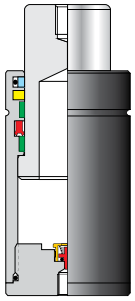
(The graphs show reference values / *I grafici mostrano valori di riferimento*)

RUN-tech / X-tech series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

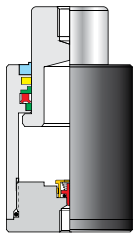
NANOTECH
RUN-tech and X-tech series

CSX



Ø mm	daN	daN	STROKE / *CORSA* mm														
			5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		●		●	●	●	●	●		●				
25	300	480		●		●	●	●	●	●		●				
32	500	800		●		●	●	●	●	●		●				
38	1000	1600		●		●	●	●	●	●		●				
50	2000	3200		●		●	●	●	●	●		●				
63	3000	4800		●		●	●	●	●	●		●				
75	5000	8000		●		●	●	●	●	●		●				
95	8000	12800		●		●	●	●	●	●		●				
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*				500		335	200	130	100	80		65				

SMLX

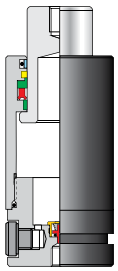


Ø mm	daN	daN	STROKE / *CORSA* mm														
			5	10	13	15	25	38	50	63	75	80	100	125	160	200
25	300	600	●	●		●	●	●	●			●				
32	500	1000	●	●		●	●	●	●			●				
38	750	1500	●	●		●	●	●	●			●				
50	1500	3000	●	●		●	●	●	●			●	●			
63			Product in development / *Prodotto in sviluppo*													
75	3000	6000	●	●		●	●	●	●			●	●			
95	5000	10000	●	●		●	●	●	●			●	●			
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*			1000	500		335	200	130	100			65	50			

STANDARD series

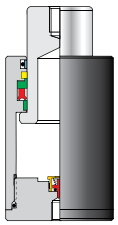
Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

C



Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		●		●	●	●	●			●				
25	300	480		●		●	●	●	●			●				
32	500	800		●		●	●	●	●			●				
38	750	1200		●		●	●	●	●			●				
50	1500	2400		●			●	●	●	●		●	●	●	●	●
63	2000	3200		●			●	●	●	●		●	●	●	●	●
75	3000	4800		●			●	●	●	●		●	●	●	●	●
95	5000	8000					●	●	●	●		●	●	●	●	●
120	9000	14400					●	●	●	●		●	●	●	●	●
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*				500		335	200	130	100	80		65	50	40	30	25
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*				300		200	120	80	60	50		40	30	25	20	15

CSM

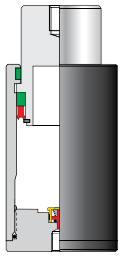


Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		●		●	●	●	●			●				
25	300	480		●		●	●	●	●			●				
32	500	800		●		●	●	●	●			●				
38	750	1200		●		●	●	●	●			●				
50	1500	2400		●			●	●	●	●		●	●	●	●	●
63	2000	3200		●			●	●	●	●		●	●	●	●	●
75	3000	4800		●			●	●	●	●		●	●	●	●	●
95	5000	8000					●	●	●	●		●	●	●	●	●
120	9000	14400					●	●	●	●		●	●	●	●	●
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*				500		335	200	130	100	80		65	50	40	30	25
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*				300		200	120	80	60	50		40	30	25	20	15

TOP

Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
12	50	80		●		●										
14	75	120		●		●										
16	100	160		●		●										
20	200	320		●		●										
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*				250		165										

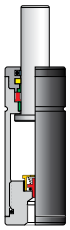
TOP



Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
25	400	640		●		●	●		●							
32	700	1120		●		●	●		●							
38	1000	1600		●		●	●		●							
50	2000	3200		●		●	●		●							
63	3000	4800		●		●	●		●							
75	4000	6400		●		●	●		●							
95	7000	11200		●		●	●		●							
120	10000	16000		●		●	●		●							
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*				250		165	100		50							

VDI 3003

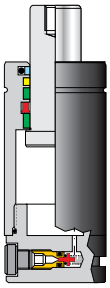
CVDI



Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	90	144				●	●	●	●	●		●				
25	200	320				●	●	●	●	●		●	●	●		
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*						335	200	130	100	80		65	50	40		
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*						200	120	80	60	50		40	30	25		

ISO 11901

CISO



Ø mm	daN	daN	STROKE / *CORSA* mm 5	10	13	16	25	38	50	63	75	80	100	125	160	200
19	100	160		●		●	●	●	●	●		●				
25	200	320		●		●	●	●	●	●		●				
32	150	195		●		●	●		●			●				
38	250	325		●	●	●	●	●	●	●	●	●				
45	500	650					●		●			●				
50	750	1125			●		●	●	●	●	●	●	●	●	●	
75	1500	2250			●		●	●	●	●	●	●	●	●	●	
95	3000	4500			●		●	●	●	●	●	●	●	●	●	
120	5000	7500			●		●	●	●	●	●	●	●	●	●	
150	7500	11250			●		●	●	●	●	●	●	●	●	●	
Max. strokes number per min. with lubrication *Colpi max/min. con lubrificazione*				500	385	315	200	130	100	80	70	65	50	40	30	
Max. strokes number per min. without lubrication *Colpi max/min. senza lubrificazione*				300	230	190	120	80	60	50	40	40	30	25	20	

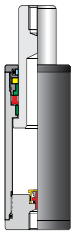
OTHER series

Nitrogen gas springs, nitrogen gas ejectors, spring ejectors
Cilindri all'azoto, espulsori a gas azoto, espulsori a molla

DESCRIPTION / *DESCRIZIONE*

MIC

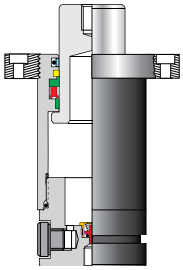
Ready-to-use ø 25 mm gas springs with different initial forces
Cilindri pronti all'uso ø 25 mm con diverse forze iniziali



DESCRIPTION / *DESCRIZIONE*

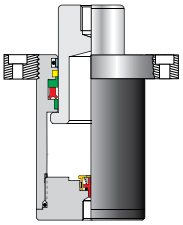
CF

Flanged gas springs
Cilindri flangiati



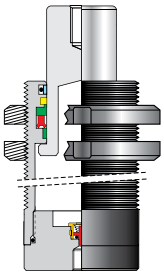
CSMF

Flanged compact gas springs
Cilindri flangiati compatti



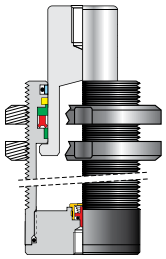
CT

Threaded-body gas springs
Cilindri con corpo filettato



CSMT

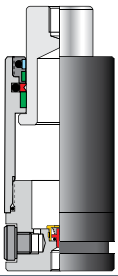
Threaded-body compact gas springs
Cilindri compatti con corpo filettato



CHT

200°C
392°F
MAX TEMPERATURE

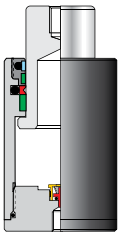
High temperature gas springs
Cilindri per alta temperatura



CSMHT

200°C
392°F
MAX TEMPERATURE

High temperature compact gas springs
Cilindri compatti per alta temperatura



CRAL

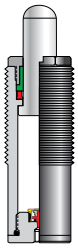
Slow-return gas springs
Cilindri a ritorno rallentato

OV

Valveless gas springs
Cilindri senza valvola

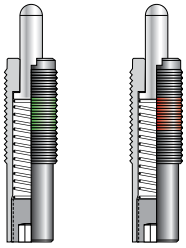
EG

Nitrogen gas ejectors
Espulsori a gas



EM

Wire spring ejectors
Espulsori a molla



Catalogue help

HOW TO ORDER

You order (example): **No. 8 CSX38-25**

You receive: 8 pieces CSX series nitrogen gas springs, ready for use, diameter Ø 38 mm, stroke 25 mm, initial force 1000daN (other specifications on CSX series page).

ATTENTION: we have enhanced the force of the C- and CSM-type gas springs (C, CSM, CF, CSMF, CT, CSMT). Whenever ordering these gas springs, always specify the required initial force!

Examples: **No. 8 CSM50-25 1500daN**
if you want the new higher-force CSM.
No. 8 CSM50-25 1000daN
if you want the old lower-force CSM.

SPECIAL SOLUTIONS: different forces and strokes (not on catalogue) are available on request.

COME ORDINARE

*Ordinate (esempio): **N° 8 CSX38-25***

Ricevete: 8 cilindri ad azoto serie CSX, pronti per l'uso, diametro Ø 38 mm, corsa 25 mm, forza iniziale 1000daN (altre specifiche sulla pagina della serie CSX).

***ATTENZIONE**: abbiamo aumentato la forza dei cilindri tipo C e CSM (C, CSM, CF, CSMF, CT, CSMT) Quando ordinate questi cilindri specificate sempre la forza richiesta!*

Esempi: ***N° 8 CSM50-25 1500daN***
se volete i nuovi CSM con forza incrementata.
N° 8 CSM50-25 1000daN
se volete i vecchi CSM con forza minore.

SOLUZIONI SPECIALI: forze e corse diverse da quelle a catalogo sono disponibili a richiesta.

GAS SPRING ACCESSORIES

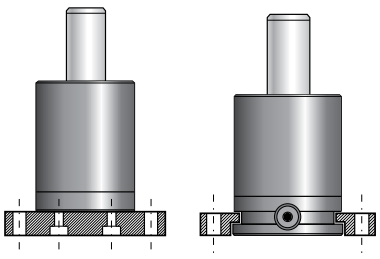
Accessories for fixing, charging/discharging, linking to open system, etc. can be found in our 'Accessories for nitrogen gas springs' catalogue.

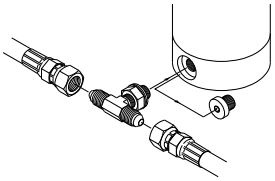
ATTENTION: use Bordignon nitrogen gas springs with Bordignon accessories only.

ACCESSORI PER CILINDRI

Accessori per fissaggio, carico/scarico, collegamento a sistema, ecc. sul nostro catalogo 'Accessori per cilindri all'azoto'.

ATTENZIONE: usare i cilindri all'azoto Bordignon solamente con accessori Bordignon.





2D & 3D TECHNICAL DRAWINGS

download various 2D & 3D file formats from
www.bordignon.com

DISEGNI TECNICI 2D E 3D

vari formati 2D e 3D scaricabili dal sito
www.bordignon.com

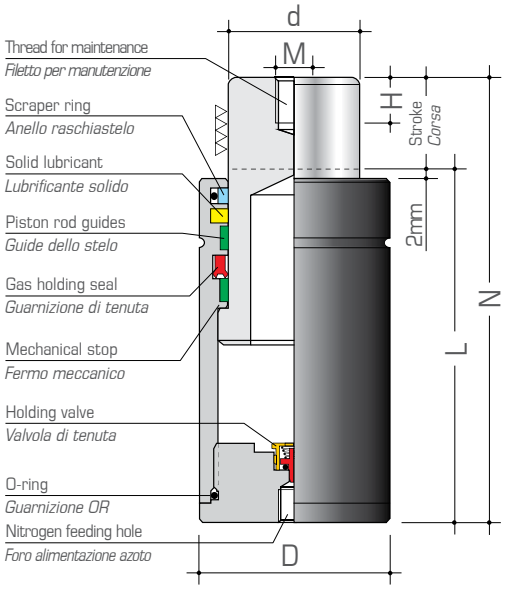
CSX

NANOTECH
RUN-tech and X-tech series

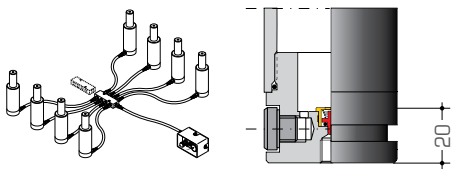
THE COMPACTPOWER: forces up to 4 times the ones of the corresponding ISO 11901 standard gas springs and up to 50% more than the corresponding gas springs of our series "C" and "CSM" (old models). Therefore you may SAVE A LOT OF SPACE AND MONEY by manufacturing more compact press-dies!
SELF-LUBRICATED: by activated solid lubricant (patent pending).
PROTECTED AGAINST CONTAMINANTS: by rod scraper.

I COMPATTOPOTENTI: a pari dimensioni hanno forza fino a 4 volte quella dei corrispondenti standard ISO 11901 e circa 50% in più dei corrispondenti della serie "C" e "CSM" (vecchi modelli). Pertanto consentono un RISPARMIO DI SPAZIO E COSTI costruendo stampi più compatti!
AUTOLUBRIFICATI: per milioni di cicli con lubrificante solido energizzato (in corso di brevetto).
PROTETTI DA CONTAMINANTI: con raschiastelo di protezione.

CSX



Special version



TECHNICAL NOTES

Important use instructions on pages 10 & 11

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

Different work strokes on request (for example 125 mm stroke).

The CS model is replaceable with the CSX model.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10 e 11

Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

Corse di lavoro diverse a richiesta (ad esempio corsa 125 mm).

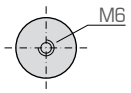
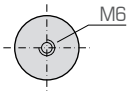
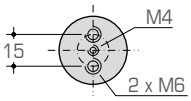
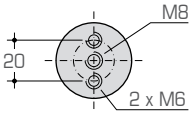
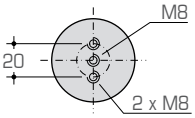
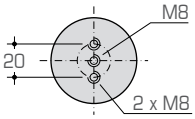
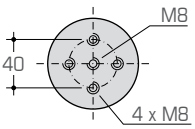
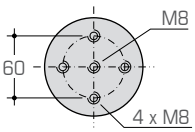
Il modello CS è sostituibile con il modello CSX.

SPECIAL VERSION

Special cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.
» **L and N dimensions: + 20 mm**
» Add an -**S** to order them
Example: no. 8 pcs CSX50-50-**S**

VERSIONE SPECIALE

Da ø 50 mm tappo speciale con scanalatura e foro laterale G1/8, per collegamento a sistema.
» ***Quote L e N: + 20 mm***
» *Per ordinarli, aggiungere una -**S***
*Esempio: n° 8 CSX50-50-**S***

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CSX19-10	10	65	75	19	10	M5	7	191	150	240	
15	15	70	85								
25	25	80	105								
38	38	97	135								
50	50	110	160								
63	63	127	190								
80	80	140	220								
CSX25-10	10	65	75	25	14	M6	8	195	300	480	
15	15	70	85								
25	25	80	105								
38	38	97	135								
50	50	110	160								
63	63	127	190								
80	80	145	225								
CSX32-10	10	65	75	32	18	M8	12	197	500	800	
15	15	70	85								
25	25	80	105								
38	38	97	135								
50	50	110	160								
63	63	132	195								
80	80	150	230								
CSX38-10	10	65	75	38	25	M8	12	205	1000	1600	
15	15	70	85								
25	25	80	105								
38	38	97	135								
50	50	110	160								
63	63	142	205								
80	80	160	240								
CSX50-10	10	80	90	50	35	M8	12	209	2000	3200	
15	15	100	115								
25	25	110	135								
38	38	127	165								
50	50	140	190								
63	63	157	220								
80	80	175	255								
CSX63-10	10	85	95	63	45	M8	12	189	3000	4800	
15	15	100	115								
25	25	110	135								
38	38	127	165								
50	50	140	190								
63	63	157	220								
80	80	175	255								
CSX75-10	10	90	100	75	58	M8	12	190	5000	8000	
15	15	110	125								
25	25	120	145								
38	38	137	175								
50	50	150	200								
63	63	177	240								
80	80	195	275								
CSX95-10	10	100	110	95	75	M8	12	182	8000	12800	
15	15	120	135								
25	25	130	155								
38	38	147	185								
50	50	165	215								
63	63	192	255								
80	80	210	290								

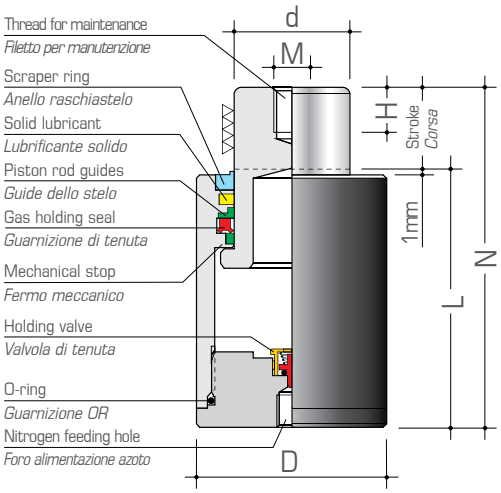
SMLX

NANOTECH
RUN-tech and X-tech series

THE SHORTEST AND MOST POWERFUL SINCE 2001: extremely compact with minimum height clearance and with forces up to 3 times the ones of the corresponding ISO 11901 standard gas springs.
FOR THE DIE-MAKER: nitrogen gas springs with reduced diameters and reduced lengths allow to manufacture more compact press-dies, cutting in drastic way all your costs.
FOR THE DIE-USER: nitrogen gas springs with long durability allow the drastic cutting of the costs generated by press-die maintenance and production stops.
SELF-LUBRICATED: by activated solid lubricant (patent pending).
PROTECTED AGAINST CONTAMINANTS: by rod scraper.

IL PIU' BASSO E PIU' POTENTE DAL 2001: estremamente compatti con minimo ingombro in altezza e forza fino a 3 volte quella dei corrispondenti standard ISO 11901.
PER LO STAMPISTA: cilindri con diametri ed altezza minori permettono la realizzazione di stampi più compatti, riducendo notevolmente tutti i vostri costi.
PER L'UTILIZZATORE: cilindri con lunga durata permettono la drastica riduzione dei costi di manutenzione sugli stampi e dei fermi macchina.
AUTOLUBRIFICATI: per milioni di cicli con lubrificante solido energizzato (in corso di brevetto).
PROTETTI DA CONTAMINANTI: con raschiastelo di protezione.

SMLX



TECHNICAL NOTES

Important use instructions on pages 10 & 11

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

Different work strokes on request.

The SML model is replaceable with the SMLX model.

NOTE TECNICHE

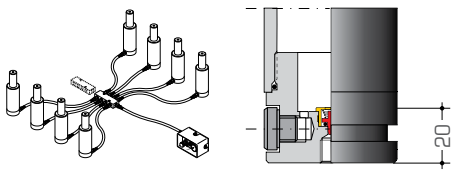
Importanti istruzioni d'uso alle pagine 10 e 11

Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

Corse di lavoro diverse a richiesta.

Il modello SML è sostituibile con il modello SMLX.

Special version

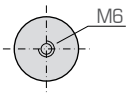
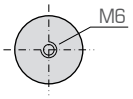
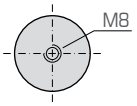
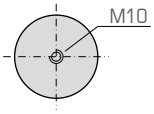
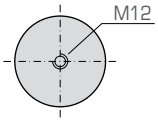
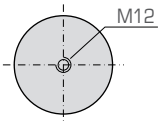


SPECIAL VERSION

Special cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.
» **L and N dimensions: + 20 mm**
» Add an -**S** to order them
Example: no. 8 pcs SMLX50-50-**S**

VERSIONE SPECIALE

Da ø 50 mm tappo speciale con scanalatura e foro laterale G1/8, per collegamento a sistema.
» ***Quote L e N: + 20 mm***
» *Per ordinarli, aggiungere una -**S***
*Esempio: n° 8 SMLX50-50-**S***

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
SMLX25-05 ●	5	35	40	25	14	M6	8	195	300	600	
10	10	40	50								
15	15	45	60								
25	25	55	80								
38	38	68	106								
50	50	80	130								
80	80	110	190								
SMLX32-05 ●	5	35	40	32	18	M6	8	196	500	1000	
10 ●	10	40	50								
15	15	45	60								
25	25	55	80								
38	38	68	106								
50	50	80	130								
80	80	110	190								
SMLX38-05 ●	5	35	40	38	22	M6	8	197	750	1500	
10 ●	10	40	50								
15	15	45	60								
25	25	55	80								
38	38	68	106								
50	50	80	130								
80	80	110	190								
SMLX50-05 ●	5	40	45	50	30	M8	12	212	1500	3000	
10	10	45	55								
15	15	50	65								
25	25	60	85								
38	38	73	111								
50	50	85	135								
80	80	120	200								
100	100	135	235								
SMLX63-05				Product in development / *Prodotto in sviluppo*							
10											
15											
25											
38											
50											
80											
100											
SMLX75-05 ●	5	45	50	75	45	M8	12	189	3000	6000	
10	10	50	60								
15	15	55	70								
25	25	65	90								
38	38	77	115								
50	50	90	140								
80	80	125	205								
100	100	145	245								
SMLX95-05 ●	5	55	60	95	58	M8	12	189	5000	10000	
10	10	60	70								
15	15	65	80								
25	25	75	100								
38	38	88	126								
50	50	100	150								
80	80	130	210								
100	100	150	250								

● The piston rods don't have the threaded hole / *Gli steli non hanno il foro filettato*

Standard series

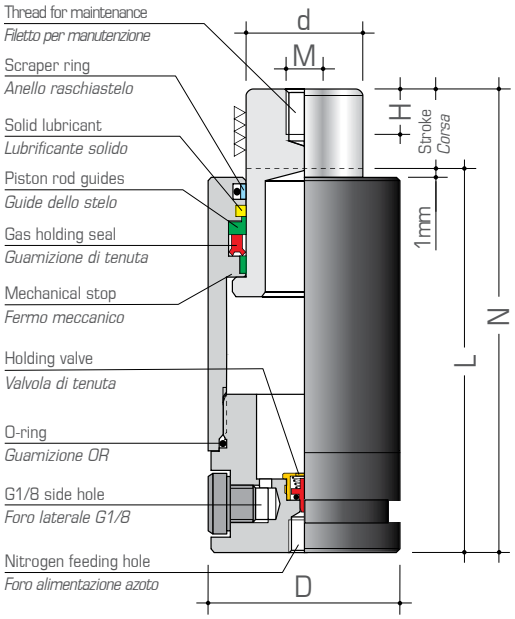
Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

C

NEW C SERIES 50% MORE POWERFUL than the old one even mantaining the same overall dimensions. **Now with groove from ø 50 mm**. The complete series is self-lubricated and protected against contaminants by rod scraper.

NUOVA SERIE C POTENZIATA NELLE FORZE DEL 50% pur conservando le stesse dimensioni esterne della vecchia serie. ***Ora con scanalatura da ø 50 mm****. Tutta la serie è autolubrificata e protetta da contaminanti con raschiastelo di protezione.*

C



TECHNICAL NOTES

Important use instructions on pages 10 & 11

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10 e 11

Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

How to order

8 C38-50 750daN

No. 8 nitrogen gas springs C ø 38 mm, stroke 50 mm, initial force 750 daN (new model).

ATTENTION: specify the required force

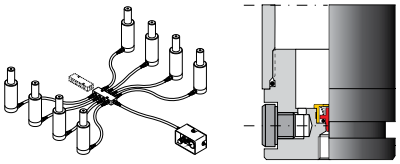
Esempio d'ordine

8 C38-50 750daN

N° 8 cilindri all'azoto C ø 38 mm, corsa 50 mm, forza iniziale 750 daN (nuovo modello).

ATTENZIONE: indicare la forza desiderata

Standard version

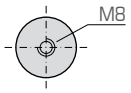
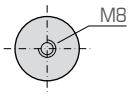
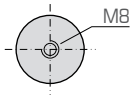
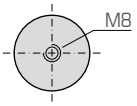
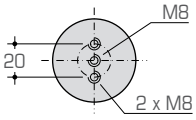
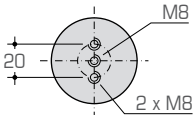
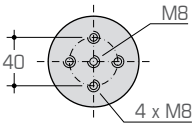
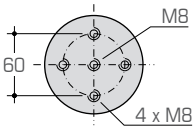
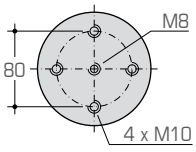


STANDARD VERSION

Ready with cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.

VERSIONE STANDARD

Pronta da ø 50 mm con tappo con scanalatura e con foro laterale G1/8 per collegamento a sistema.

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
C19-10 ●	10	70	80	19	10	M5	7	191	150	240	
15 ●	15	75	90								
25 ●	25	85	110								
38 ●	38	98	136								
50 ●	50	110	160								
80 ●	80	140	220								
C25-10 ●	10	70	80	25	14	M6	8	195	300	480	
15 ●	15	75	90								
25 ●	25	85	110								
38 ●	38	98	136								
50 ●	50	110	160								
80 ●	80	140	220								
C32-10 ●	10	60	70	32	18	M8	12	196	500	800	
15 ●	15	65	80								
25 ●	25	75	100								
38 ●	38	88	126								
50 ●	50	100	150								
80 ●	80	130	210								
C38-10 ●	10	65	75	38	22	M8	12	197	750	1200	
15 ●	15	70	85								
25 ●	25	80	105								
38 ●	38	93	131								
50 ●	50	105	155								
80 ●	80	140	220								
C50-10	10	95	105	50	30	M8	12	212	1500	2400	
25	25	110	135								
38	38	123	161								
50	50	135	185								
63	63	148	211								
80	80	165	245								
100	100	195	295								
125 ●	125	220	345								
160 ●	160	255	415								
200 ●	200	295	495								
C63-10	10	95	105	63	36	M8	12	196	2000	3200	
25	25	110	135								
38	38	123	161								
50	50	135	185								
63	63	148	211								
80	80	165	245								
100	100	185	285								
125 ●	125	220	345								
160 ●	160	255	415								
200 ●	200	295	495								
C75-10	10	105	115	75	45	M8	12	189	3000	4800	
25	25	120	145								
38	38	133	171								
50	50	145	195								
63	63	158	221								
80	80	175	255								
100	100	200	300								
125 ●	125	225	350								
160 ●	160	265	425								
200 ●	200	310	510								
C95-25	25	130	155	95	58	M8	12	189	5000	8000	
38	38	143	181								
50	50	155	205								
63	63	168	231								
80	80	190	270								
100	100	210	310								
125 ●	125	245	370								
160 ●	160	280	440								
200 ●	200	330	530								
C120-25	25	140	165	120	75	M8	12	204	9000	14400	
38	38	153	191								
50	50	165	215								
63	63	178	241								
80	80	195	275								
100	100	215	315								
125 ●	125	250	375								
160 ●	160	290	450								
200 ●	200	340	540								

● Without G1/8 side hole and groove / *Senza foro laterale G1/8 e scanalatura*

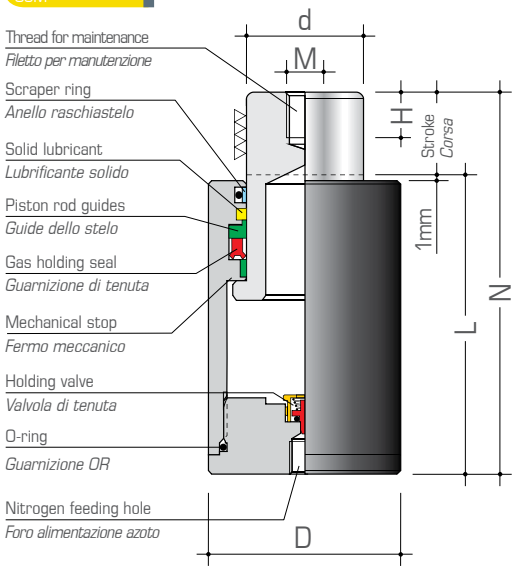
● Available on request / *Disponibili a richiesta*

CSM

NEW CSM SERIES 50% MORE POWERFUL than the old one even maintaining the same overall dimensions. The complete series is self-lubricated and protected against contaminants by rod scraper.

NUOVA SERIE CSM POTENZIATA NELLE FORZE DEL 50% pur conservando le stesse dimensioni esterne della vecchia serie. Tutta la serie è autolubrificata e protetta da contaminanti con raschiastelo di protezione.

CSM



TECHNICAL NOTES

Important use instructions on pages 10 & 11

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10 e 11

Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

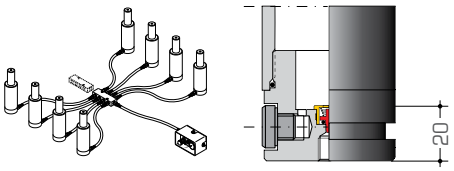
How to order

8 CSM38-50 750daN
No. 8 nitrogen gas springs CSM ø 38 mm, stroke 50 mm, initial force 750 daN (new model).
ATTENTION: specify the required force

Esempio d'ordine

8 CSM38-50 750daN
N° 8 cilindri all'azoto CSM ø 38 mm, corsa 50 mm, forza iniziale 750 daN (nuovo modello).
ATTENZIONE: indicare la forza desiderata

Special version

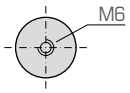
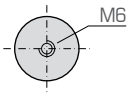
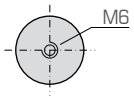
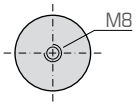
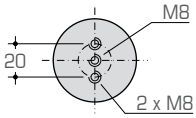
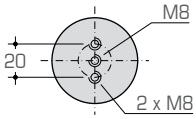
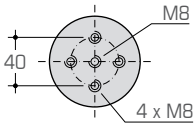
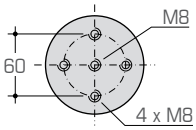
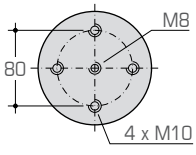


SPECIAL VERSION

Special cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.
» **L and N dimensions: + 20 mm**
» Add an -**S** to order them
Example: no. 8 pcs CSM50-50-**S**

VERSIONE SPECIALE

Da ø 50 mm tappo speciale con scanalatura e foro laterale G1/8, per collegamento a sistema.
» ***Quote L e N: + 20 mm***
» *Per ordinarli, aggiungere una -**S***
*Esempio: n° 8 CSM50-50-**S***

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CSM19-10	10	50	60	19	10	M5	7	191	150	240	
15	15	55	70								
25	25	65	90								
38	38	78	116								
50	50	90	140								
80	80	120	200								
CSM25-10	10	50	60	25	14	M6	8	195	300	480	
15	15	55	70								
25	25	65	90								
38	38	78	116								
50	50	90	140								
80	80	120	200								
CSM32-10	10	55	65	32	18	M8	12	196	500	800	
15	15	60	75								
25	25	70	95								
38	38	83	121								
50	50	95	145								
80	80	125	205								
CSM38-10	10	55	65	38	22	M8	12	197	750	1200	
15	15	60	75								
25	25	70	95								
38	38	83	121								
50	50	95	145								
80	80	125	205								
CSM50-10	10	60	70	50	30	M8	12	212	1500	2400	
25	25	75	100								
38	38	88	126								
50	50	100	150								
63	63	113	176								
80	80	130	210								
100	100	150	250								
125 ●	125	190	315								
160 ●	160	235	395								
200 ●	200	275	475								
CSM63-10	10	65	75	63	36	M8	12	196	2000	3200	
25	25	80	105								
38	38	93	131								
50	50	105	155								
63	63	118	181								
80	80	135	215								
100	100	160	260								
125 ●	125	190	315								
160 ●	160	235	395								
200 ●	200	275	475								
CSM75-10	10	65	75	75	45	M8	12	189	3000	4800	
25	25	80	105								
38	38	93	131								
50	50	105	155								
63	63	118	181								
80	80	135	215								
100	100	155	255								
125 ●	125	200	325								
160 ●	160	250	410								
200 ●	200	300	500								
CSM95-25	25	90	115	95	58	M8	12	189	5000	8000	
38	38	103	141								
50	50	115	165								
63	63	128	191								
80	80	155	235								
100	100	185	285								
125 ●	125	220	345								
160 ●	160	260	420								
200 ●	200	310	510								
CSM120-25	25	100	125	120	75	M8	12	204	9000	14400	
38	38	113	151								
50	50	125	175								
63	63	138	201								
80	80	160	240								
100	100	190	290								
125 ●	125	225	350								
160 ●	160	270	430								
200 ●	200	320	520								

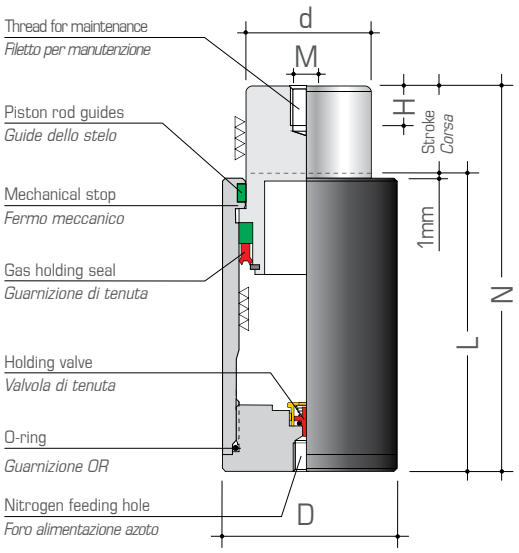
● Available on request / *Disponibili a richiesta*

TOP

The gas holding seal of the TOP series gas springs works on the body. Therefore, up to ø 32 mm, these gas springs offer maximum force. The TOP gas springs need protection against contaminants and need lubrication.

I cilindri della serie TOP hanno tenuta sulla camera e quindi, fino al ø 32 mm, forniscono massima forza. I cilindri TOP devono essere protetti da contaminanti, non potendo essere dotati di raschiastelo di protezione, e devono essere lubrificati.

TOP 25/120



TECHNICAL NOTES

Important use instructions on pages 10 & 11

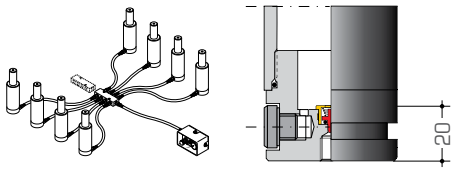
For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10 e 11

Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

Special version



SPECIAL VERSION

Special cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.

» **L and N dimensions: + 20 mm**

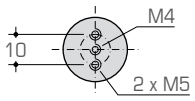
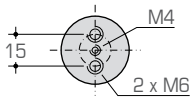
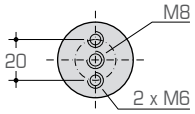
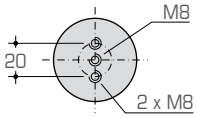
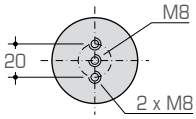
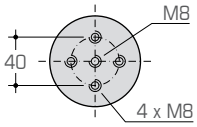
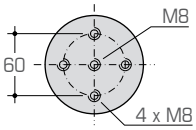
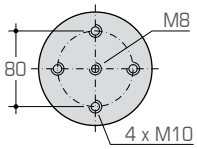
» Add an -**S** to order them
Example: no. 8 pcs TOP50-50-**S**

VERSIONE SPECIALE

Da ø 50 mm tappo speciale con scanalatura e foro laterale G1/8, per collegamento a sistema.

» ***Quote L e N: + 20 mm***

» *Per ordinarli, aggiungere una -**S***
*Esempio: n° 8 TOP50-50-**S***

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
TOP25-10	10	65	75	25	16	M8	12	157	400	640	
15	15	75	90								
25	25	95	120								
50	50	145	195								
TOP32-10	10	65	75	32	20	M8	12	154	700	1120	
15	15	75	90								
25	25	95	120								
50	50	145	195								
TOP38-10	10	65	75	38	24	M8	12	162	1000	1600	
15	15	75	90								
25	25	95	120								
50	50	145	195								
TOP50-10	10	70	80	50	36	M8	12	159	2000	3200	
15	15	80	95								
25	25	100	125								
50	50	150	200								
TOP63-10	10	75	85	63	46	M8	12	153	3000	4800	
15	15	85	100								
25	25	105	130								
50	50	155	205								
TOP75-10	10	75	85	75	56	M8	12	142	4000	6400	
15	15	85	100								
25	25	105	130								
50	50	155	205								
TOP95-10	10	80	90	95	70	M8	12	154	7000	11200	
15	15	90	105								
25	25	110	135								
50	50	160	210								
TOP120-10	10	90	100	120	90	M8	12	141	10000	16000	
15	15	100	115								
25	25	120	145								
50	50	170	220								

TOP

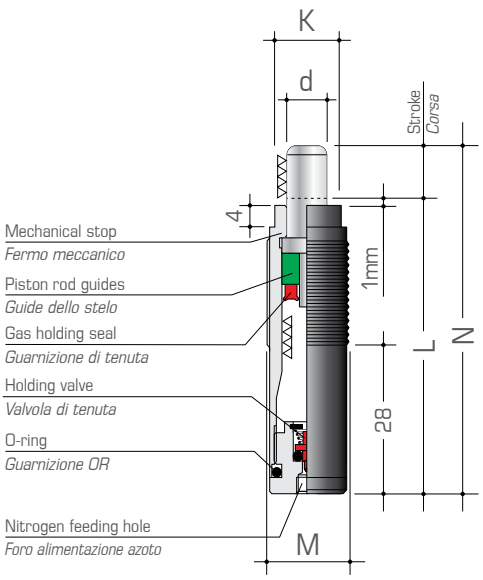
The gas holding seal of the TOP series threaded-body gas springs works on the body. Therefore these gas springs offer maximum force at any given diameter. The TOP gas springs need protection against contaminants and need lubrication.

I cilindri della serie TOP con corpo filettato hanno tenuta sulla camera, e quindi forniscono massima forza per ogni diametro. I cilindri TOP devono essere protetti da contaminanti, non potendo essere dotati di raschiastelo di protezione, e devono essere lubrificati.

Important use instructions on pages 10 & 11

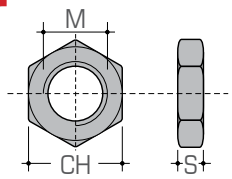
Importanti istruzioni d'uso alle pagine 10-11

TOP 12/20



MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	M	d mm	K mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
TOP12-10	10	55	65	M12 x 1.25	5	9	150	50	80	M4
15	15	65	80							
TOP14-10	10	55	65	M14 x 1.5	6	11	150	75	120	M4
15	15	65	80							
TOP16-10	10	55	65	M16 x 1.5	8	13	127	100	160	M4
15	15	65	80							
TOP20-10	10	55	65	M20 x 1.5	10	17	151	200	320	M4
15	15	65	80							

Fastening nuts / *Dadi di fissaggio*



MODEL *MODELLO*	M	S mm	CH mm
TOP-D-12	M12 x 1.25	7	19
14	M14 x 1.5	8	22
16	M16 x 1.5	8	24
20	M20 x 1.5	9	30

CVDI

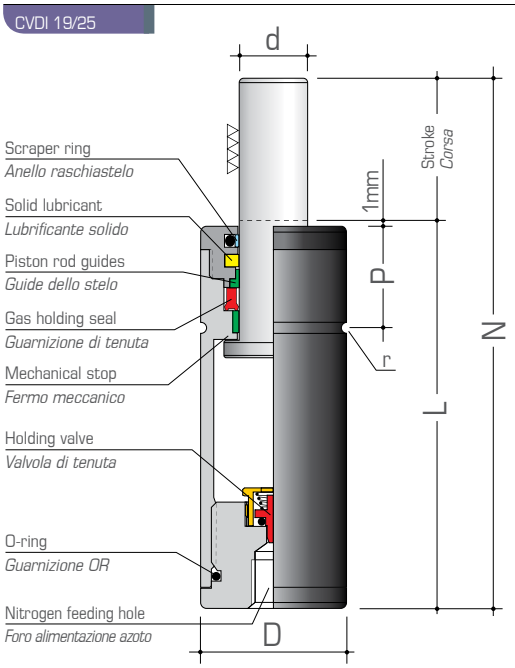
The CVDI nitrogen gas springs are in accordance with the VDI 3003 standard.

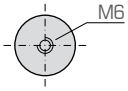
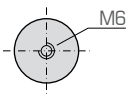
I cilindri della serie CVDI sono conformi alla norma VDI 3003.

Important use instructions on pages 10 & 11

Importanti istruzioni d'uso alle pagine 10-11

CVDI 19/25



MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	P mm	r mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CVDI19-15	15	57	72	19	8	17	1	180	90	144	
25	25	67	92								
38	38	80	118								
50	50	92	142								
63	63	108	171								
80	80	125	205								
CVDI25-15	15	57	72	25	12	17	1	177	200	320	
25	25	67	92								
38	38	80	118								
50	50	92	142								
63	63	108	171								
80	80	125	205								
100	100	145	245								
125	125	170	295								

CISO 19/25

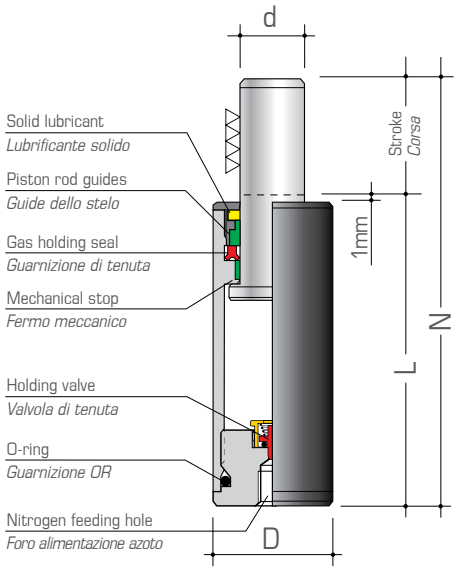
The CISO series gas springs are in accordance with the ISO 11901:1995 standard, which starts from ø 32 mm. This CISO series includes the ø 19 mm and ø 25 mm also. Flanges are in accordance with the ISO standard too, and can be found in the 'Accessories for nitrogen gas springs' catalogue.

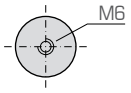
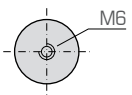
Important use instructions on pages 10 & 11

I cilindri della serie CISO sono conformi alla norma ISO 11901:1995, che inizia dal ø 32 mm. Questa serie CISO fornisce anche i ø 19 mm e ø 25 mm. Anche le flange di fissaggio sono realizzate in totale conformità alla norma ISO, e possono essere trovate nel catalogo 'Accessori per cilindri all'azoto'.

Importanti istruzioni d'uso alle pagine 10-11

CISO 19 / 25

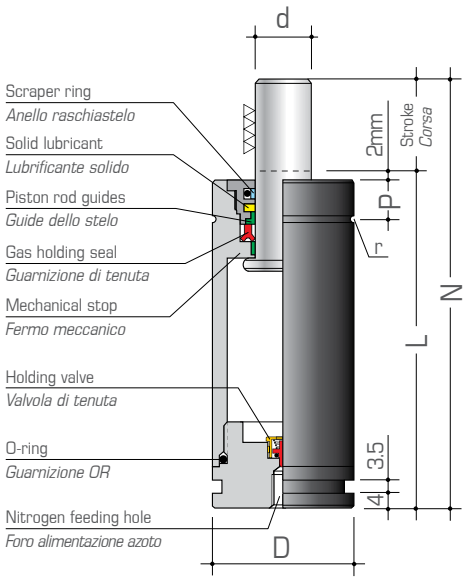


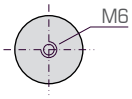
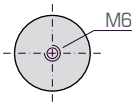
MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*	
CISO19-10 ●	10	55	65	19	10	128	100	160		
16 ●	16	61	77							
25 ●	25	70	95							
38 ●	38	83	121							
50 ●	50	95	145							
63 ●	63	108	171							
80 ●	80	125	205							
CISO25-10 ●	10	55	65	25	14	129	200	320		
16 ●	16	61	77							
25 ●	25	70	95							
38 ●	38	83	121							
50 ●	50	95	145							
63 ●	63	108	171							
80 ●	80	125	205							

● Without scraper ring / *Senza raschiastelo*

CISO 32/38

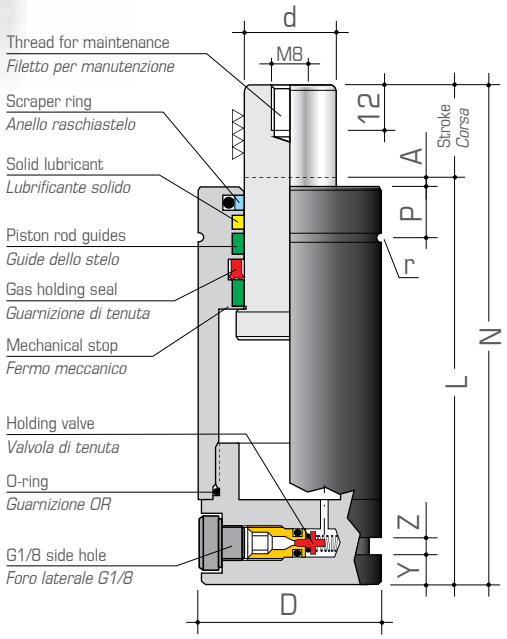
CISO 32 / 38



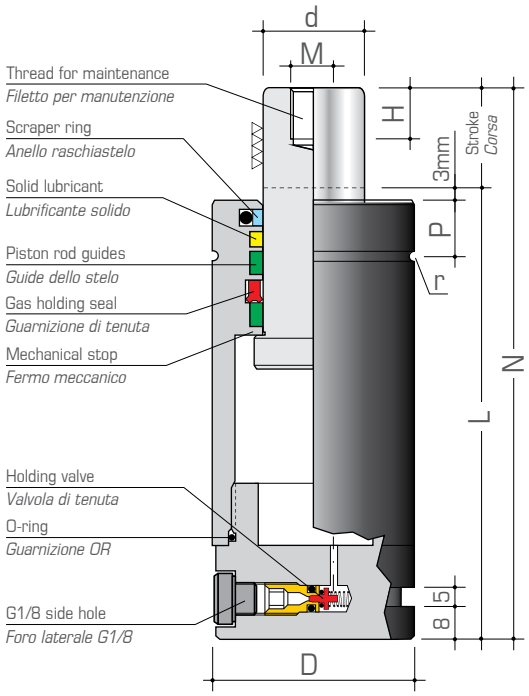
MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	P mm	r mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CISO32-10	10	60	70	32	11.5	10.5	1	145	150	195	
16	16	66	82								
25	25	75	100								
50	50	100	150								
80	80	130	210								
CISO38-10	10	60	70	38	15	10.5	1	142	250	325	
13	13	63	76								
16	16	66	82								
25	25	75	100								
38	38	88	126								
50	50	100	150								
63	63	113	176								
75	75	126	201								
80	80	130	210								

CISO 45/50 and 75/150

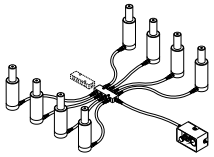
CISO 45 / 50



CISO 75 / 150

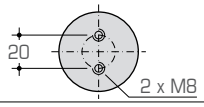
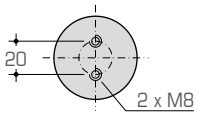


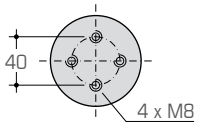
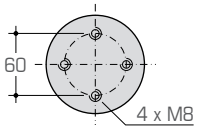
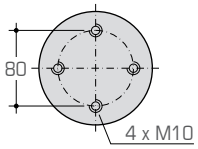
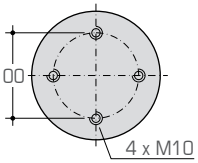
Linkable / *Collegabili*



CISO series gas springs, from ø 45 mm, have a G1/8 side hole, linkable to open system.

I cilindri della serie CISO, dal ø 45 mm, sono dotati di foro laterale G1/8 per collegamento a sistema.

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	P mm	A mm	r mm	Z mm	Y mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CISO45-25	25	110	135											
50	50	135	185	45	20	14.5	2	1	3.5	4	159	500	650	
80	80	165	245											
CISO50-13	13	107	120											
25	25	120	145											
38	38	133	171											
50	50	145	195											
63	63	159	222											
75	75	170	245	50	25	14.5	3	2	5	8	153	750	1125	
80	80	175	255											
100	100	195	295											
125 ●	125	220	345											
160 ●	160	255	415											

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	P mm	r mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CISO75-13	13	121	134										
25	25	135	160										
38	38	147	185										
50	50	160	210										
63	63	173	236										
75	75	184	259	75	36	18	2.5	M10	15	148	1500	2250	
80	80	190	270										
100	100	210	310										
125 ●	125	235	360										
160 ●	160	270	430										
CISO95-13	13	131	144										
25	25	145	170										
38	38	157	195										
50	50	170	220										
63	63	183	246										
75	75	194	269	95	50	21	2.5	M10	15	153	3000	4500	
80	80	200	280										
100	100	220	320										
125 ●	125	245	370										
160 ●	160	280	440										
CISO120-13	13	151	164										
25	25	165	190										
38	38	177	215										
50	50	190	240										
63	63	203	266										
75	75	214	289	120	65	22.5	2.5	M12	18	151	5000	7500	
80	80	220	300										
100	100	240	340										
125 ●	125	265	390										
160 ●	160	300	460										
CISO150-13	13	168	181										
25	25	180	205										
38	38	193	231										
50	50	205	255										
63	63	219	282										
75	75	230	305	150	80	24.5	2.5	M12	18	150	7500	11250	
80	80	235	315										
100	100	255	355										
125 ●	125	280	405										
160 ●	160	315	475										

● Available on request / *Disponibili a richiesta*

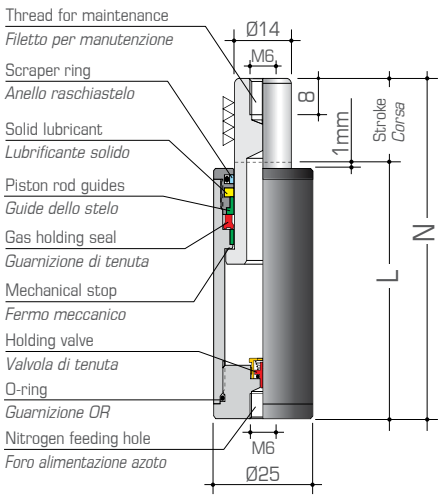
Nitrogen gas springs for dies

MIC

Diameter 25 mm ready-to-use gas springs, charged at five different initial forces: 50 daN, 100 daN, 150 daN, 200 daN and 300 daN (NEW MODEL).

Cilindri di diametro 25 mm già caricati e pronti per l'uso in cinque diverse forze iniziali standard: 50 daN, 100 daN, 150 daN, 200 daN e 300 daN (NUOVO MODELLO).

MIC



TECHNICAL NOTES

Important use instructions on pages 10 & 11

End-stroke force is 1.6 times the initial force.

How to order

8 MIC25-25-F150
No. 8 nitrogen gas springs MIC ø 25 mm, stroke 25 mm, initial force 150 daN.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10 e 11

La forza a fine corsa è pari a 1,6 volte la forza iniziale.

Esempio d'ordine

8 MIC25-25-F150
N° 8 cilindri all'azoto MIC ø 25 mm, corsa 25 mm, forza iniziale 150 daN.

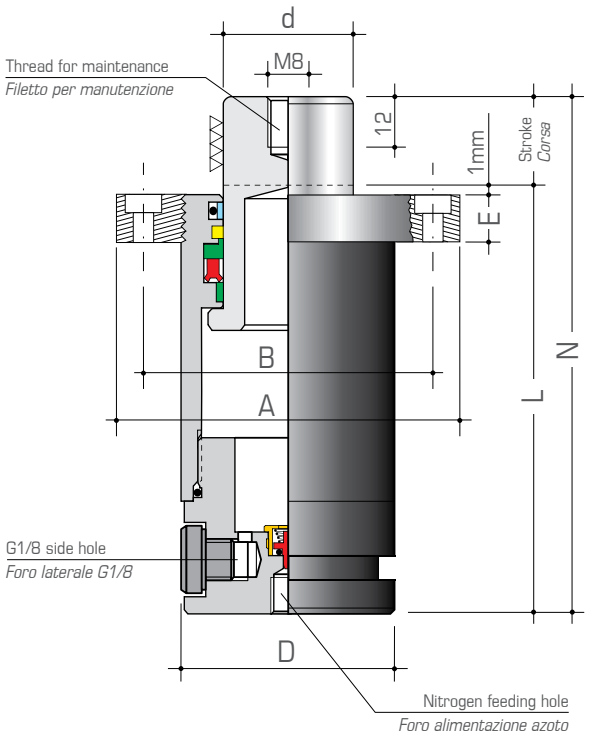
MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	...F50 bar	...F50 daN	...F100 bar	...F100 daN	...F150 bar	...F150 daN	...F200 bar	...F200 daN	...F300 bar	...F300 daN
MIC25-10- ...	10	50	60	32	50	65	100	97	150	130	200	195	300
15- ...	15	55	70										
25- ...	25	65	90										
38- ...	38	78	116										
50- ...	50	90	140										
80- ...	80	120	200										

CF

Nitrogen gas springs with fixing flange, threaded on the cylinder body to ensure a higher safety level compared with flanges fixed with lock ring. With increased initial force, linkable to open system.

Cilindri con flangia di fissaggio, filettata sul corpo per una maggiore sicurezza rispetto alle flange fissate con anelli metallici. Potenziati nelle forze, collegabili a sistema.

CF



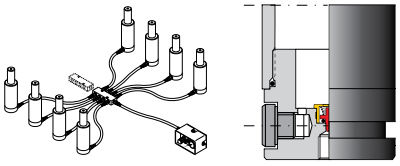
How to order

8 CF50-50 1500daN
No. 8 nitrogen gas springs CF ø 50 mm, stroke 50 mm, initial force 1500 daN (new model), with fixing flange.
ATTENTION: specify the required force

Esempio d'ordine

8 CF50-50 1500daN
N° 8 cilindri all'azoto CF ø 50 mm, corsa 50 mm, forza iniziale 1500 daN (nuovo modello), con flangia di fissaggio.
ATTENZIONE: indicare la forza desiderata

Standard version



STANDARD VERSION

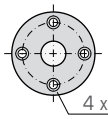
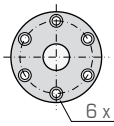
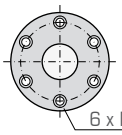
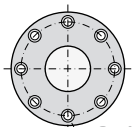
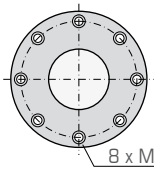
Ready with cap with groove and G1/8 side hole, linkable to open system, from ø 50 mm.

Important use instructions on pages 10 & 11

VERSIONE STANDARD

Pronta da ø 50 mm con tappo con scanalatura e con foro laterale G1/8 per collegamento a sistema.

Importanti istruzioni d'uso alle pagine 10 e 11

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	A mm	B mm	E mm	bar	daN	daN	FLANGES *FLANGE*
CF50-10 ●	10	95	105	50	30	100	75	25	212	1500	2400	 4 x M10
25 ●	25	110	135									
38 ●	38	123	161									
50 ●	50	135	185									
63 ●	63	148	211									
80 ●	80	165	245									
100 ●	100	195	295									
125 ●	125	220	345									
160 ●	160	255	415									
200 ●	200	295	495									
CF63-10 ●	10	95	105	63	36	125	100	25	196	2000	3200	 6 x M10
25 ●	25	110	135									
38 ●	38	123	161									
50 ●	50	135	185									
63 ●	63	148	211									
80 ●	80	165	245									
100 ●	100	185	285									
125 ●	125	220	345									
160 ●	160	255	415									
200 ●	200	295	495									
CF75-10 ●	10	105	115	75	45	125	100	25	189	3000	4800	 6 x M10
25 ●	25	120	145									
38 ●	38	133	171									
50 ●	50	145	195									
63 ●	63	158	221									
80 ●	80	175	255									
100 ●	100	200	300									
125 ●	125	225	350									
160 ●	160	265	425									
200 ●	200	310	510									
CF95-25 ●	25	130	155	95	58	145	120	25	189	5000	8000	 8 x M10
38 ●	38	143	181									
50 ●	50	155	205									
63 ●	63	168	231									
80 ●	80	190	270									
100 ●	100	210	310									
125 ●	125	245	370									
160 ●	160	280	440									
200 ●	200	330	530									
CF120-25 ●	25	140	165	120	75	170	145	35	204	9000	14400	 8 x M10
38 ●	38	153	191									
50 ●	50	165	215									
63 ●	63	178	241									
80 ●	80	195	275									
100 ●	100	215	315									
125 ●	125	250	375									
160 ●	160	290	450									
200 ●	200	340	540									

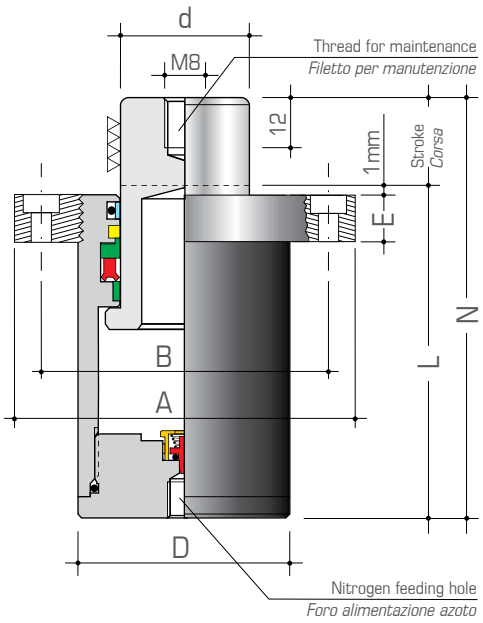
● Available on request / *Disponibili a richiesta*

CSMF

Compact nitrogen gas springs with fixing flange, threaded on the cylinder body to ensure a higher safety level compared with flanges fixed with lock ring. With increased initial force.

Cilindri compatti con flangia di fissaggio, filettata sul corpo per una maggiore sicurezza rispetto alle flange fissate con anelli metallici. Potenziati nelle forze.

CSMF



How to order

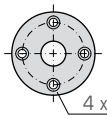
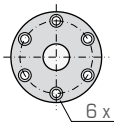
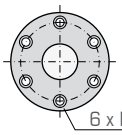
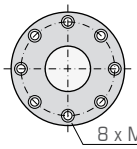
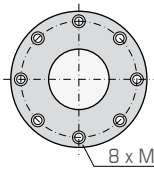
8 CSMF50-50 1500daN
No. 8 nitrogen gas springs CSMF ø 50 mm, stroke 50 mm, initial force 1500 daN (new model), with fixing flange.
ATTENTION: specify the required force

Important use instructions on pages 10 & 11

Esempio d'ordine

8 CSMF50-50 1500daN
N° 8 cilindri all'azoto CSMF ø 50 mm, corsa 50 mm, forza iniziale 1500 daN (nuovo modello), con flangia di fissaggio.
ATTENZIONE: indicare la forza desiderata

Importanti istruzioni d'uso alle pagine 10 e 11

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	A mm	B mm	E mm	bar	daN	daN	FLANGES *FLANGE*
CSMF50-10 ●	10	60	70	50	30	100	75	25	212	1500	2400	 4 x M10
25 ●	25	75	100									
38 ●	38	88	126									
50 ●	50	100	150									
63 ●	63	113	176									
80 ●	80	130	210									
100 ●	100	150	250									
125 ●	125	190	315									
160 ●	160	235	395									
200 ●	200	275	475									
CSMF63-10 ●	10	65	75	63	36	125	100	25	196	2000	3200	 6 x M10
25 ●	25	80	105									
38 ●	38	93	131									
50 ●	50	105	155									
63 ●	63	118	181									
80 ●	80	135	215									
100 ●	100	160	260									
125 ●	125	190	315									
160 ●	160	235	395									
200 ●	200	275	475									
CSMF75-10 ●	10	65	75	75	45	125	100	25	189	3000	4800	 6 x M10
25 ●	25	80	105									
38 ●	38	93	131									
50 ●	50	105	155									
63 ●	63	118	181									
80 ●	80	135	215									
100 ●	100	155	255									
125 ●	125	200	325									
160 ●	160	250	410									
200 ●	200	300	500									
CSMF95-25 ●	25	90	115	95	58	145	120	25	189	5000	8000	 8 x M10
38 ●	38	103	141									
50 ●	50	115	165									
63 ●	63	128	191									
80 ●	80	155	235									
100 ●	100	185	285									
125 ●	125	220	345									
160 ●	160	260	420									
200 ●	200	310	510									
CSMF120-25 ●	25	100	125	120	75	170	145	35	204	9000	14400	 8 x M10
38 ●	38	113	151									
50 ●	50	125	175									
63 ●	63	138	201									
80 ●	80	160	240									
100 ●	100	190	290									
125 ●	125	225	350									
160 ●	160	270	430									
200 ●	200	320	520									

● Available on request / *Disponibili a richiesta*

Other series

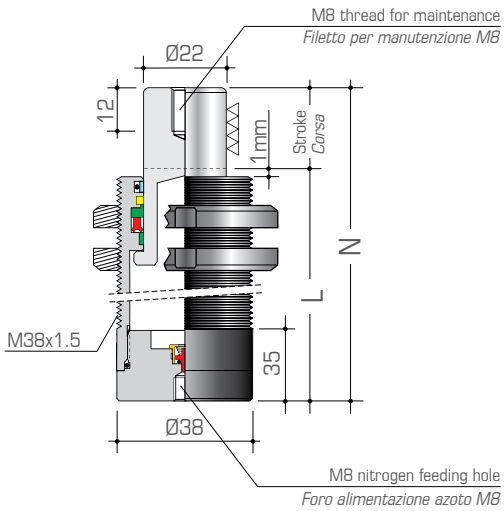
Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

CT

The CT series nitrogen gas springs have the threaded body to allow a different fixing.

I cilindri della serie CT hanno il corpo filettato che permette un fissaggio alternativo.

CT38



TECHNICAL NOTES

Important use instructions on pages 10 & 11

ATTENTION: the CT38 model corresponds to the old C38...S

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10-11

ATTENZIONE: il modello CT38 corrisponde al vecchio C38...S

How to order

8 CT38-50 750daN

No. 8 nitrogen gas springs CT ø 38 mm, stroke 50 mm, initial force 750 daN (new model), with threaded body.

ATTENTION: specify the required force

Esempio d'ordine

8 CT38-50 750daN

N° 8 cilindri all'azoto CT ø 38 mm, corsa 50 mm, forza iniziale 750 daN (nuovo modello), con corpo filettato.

ATTENZIONE: indicare la forza desiderata

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	bar	daN	daN	
CT38-10 ● ●	10	65	75	197	750	1200	
15 ● ●	15	70	85				
25 ● ●	25	80	105				
38 ● ●	38	93	131				
50 ● ●	50	105	155				
80 ● ●	80	140	220				

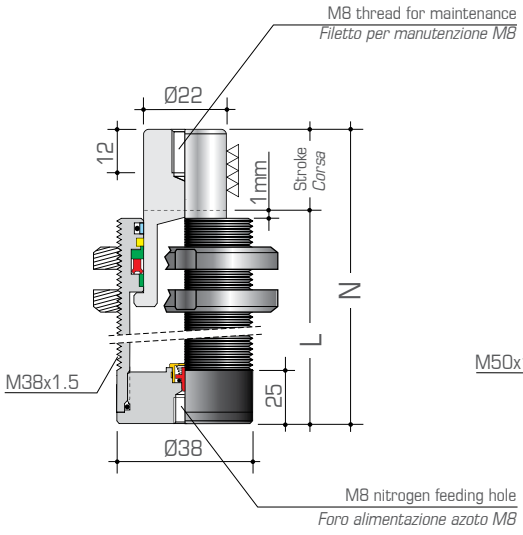
- Available on request / *Disponibili a richiesta*
- Two fastening rings are supplied with each gas spring / *Con ogni cilindro sono fornite due ghiere di fissaggio*

CSMT

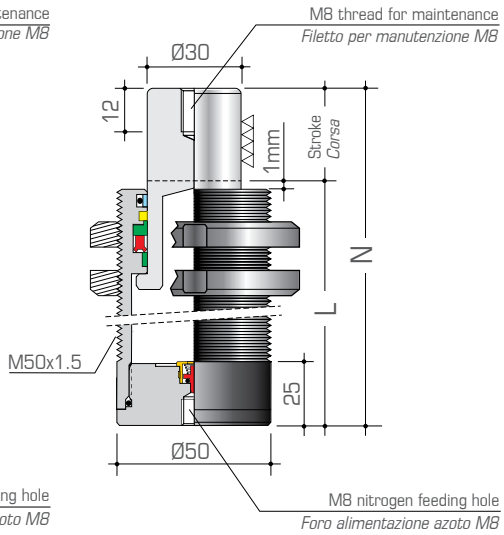
The CSMT series compact nitrogen gas springs have the threaded body to allow a different fixing.

I cilindri compatti della serie CSMT hanno il corpo filettato che permette un fissaggio alternativo.

CSMT 38



CSMT 50



How to order

8 CSMT38-50 750daN
No. 8 nitrogen gas springs CSMT ø 38 mm, stroke 50 mm, initial force 750 daN (new model), with threaded body.
ATTENTION: specify the required force

Important use instructions on pages 10 & 11

Esempio d'ordine

8 CSMT38-50 750daN
N° 8 cilindri all'azoto CSMT ø 38 mm, corsa 50 mm, forza iniziale 750 daN (nuovo modello), con corpo filettato.
ATTENZIONE: indicare la forza desiderata

Importanti istruzioni d'uso alle pagine 10-11

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	bar	daN	daN
CSMT38-10 ● ●	10	55	65	197	750	1200
15 ● ●	15	60	75			
25 ● ●	25	70	95			
38 ● ●	38	83	121			
50 ● ●	50	95	145			
80 ● ●	80	125	205			

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	bar	daN	daN
CSMT50-10 ● ●	10	60	70	212	1500	2400
25 ● ●	25	75	100			
38 ● ●	38	88	126			
50 ● ●	50	100	150			
63 ● ●	63	113	176			
80 ● ●	80	130	210			
100 ● ●	100	150	250			

● Available on request / *Disponibili a richiesta*
● Two fastening rings are supplied with each gas spring / Con ogni cilindro sono fornite due ghiere di fissaggio

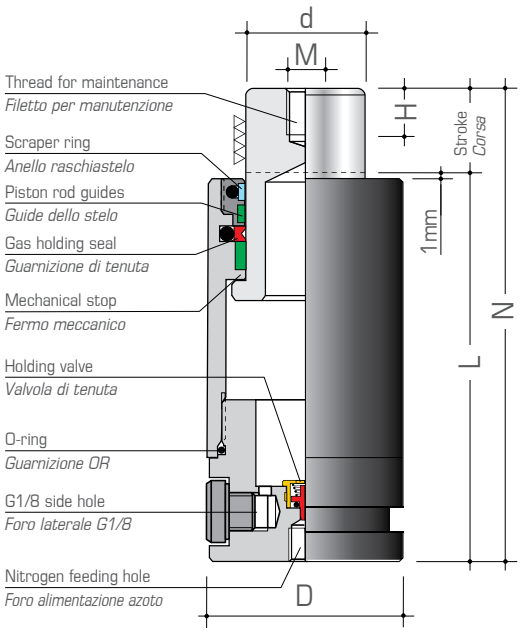
CHT

200°C
392°F
MAX TEMPERATURE

CHT series has been developed to work up to 200°C (392°F), for the most demanding high temperature applications.

La serie CHT è stata sviluppata per lavorare fino a 200°C (392°F), per le più critiche applicazioni ad alta temperatura.

CHT



TECHNICAL NOTES

Important use instructions on pages 10 & 11

Different work strokes on request.

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10-11

Corse di lavoro diverse a richiesta.

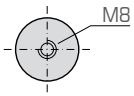
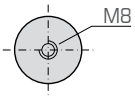
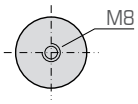
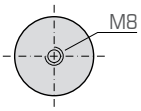
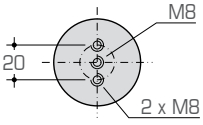
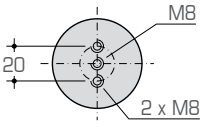
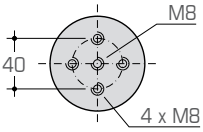
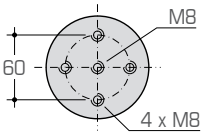
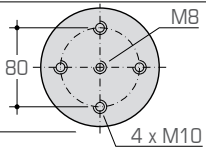
Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

How to order

IMPORTANT: it is necessary to contact our technical department in order to make sure that CHT gas springs are ok for the required application. Bordignon technical department will send you a dedicated form to be filled with the application data.

Esempio d'ordine

***IMPORTANTE**: è necessario contattare il nostro ufficio tecnico per assicurarsi che i cilindri CHT siano adatti per l'applicazione richiesta. Il reparto tecnico Bordignon vi invierà un apposito modulo da compilare con i dati dell'applicazione.*

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CHT19-10 ● ●	10	70	80	19	10	M5	7	128	100	160	
15 ● ●	15	75	90								
25 ● ●	25	85	110								
38 ● ●	38	98	136								
50 ● ●	50	110	160								
80 ● ●	80	140	220								
CHT25-10 ● ●	10	70	80	25	14	M6	8	129	200	320	
15 ● ●	15	75	90								
25 ● ●	25	85	110								
38 ● ●	38	98	136								
50 ● ●	50	110	160								
80 ● ●	80	140	220								
125 ● ●	125	185	310								
CHT32-10 ● ●	10	60	70	32	18	M8	12	137	350	560	
15 ● ●	15	65	80								
25 ● ●	25	75	100								
38 ● ●	38	88	126								
50 ● ●	50	100	150								
80 ● ●	80	130	210								
125 ● ●	125	175	300								
160 ● ●	160	210	370								
CHT38-10 ● ●	10	65	75	38	22	M8	12	131	500	800	
15 ● ●	15	70	85								
25 ● ●	25	80	105								
38 ● ●	38	93	131								
50 ● ●	50	105	155								
80 ● ●	80	140	220								
125 ● ●	125	185	310								
160 ● ●	160	220	380								
200 ● ●	200	260	460								
CHT50-10 ●	10	95	105	50	30	M8	12	141	1000	1600	
25 ●	25	110	135								
38 ●	38	123	161								
50 ●	50	135	185								
63 ●	63	148	211								
80 ●	80	165	245								
100 ●	100	195	295								
125 ●	125	220	345								
160 ●	160	255	415								
200 ●	200	295	495								
250 ●	250	345	595								
CHT63-10 ●	10	95	105	63	36	M8	12	147	1500	2400	
25 ●	25	110	135								
38 ●	38	123	161								
50 ●	50	135	185								
63 ●	63	148	211								
80 ●	80	165	245								
100 ●	100	185	285								
125 ●	125	220	345								
160 ●	160	255	415								
200 ●	200	295	495								
CHT75-10 ●	10	105	115	75	45	M8	12	157	2500	4000	
25 ●	25	120	145								
38 ●	38	133	171								
50 ●	50	145	195								
63 ●	63	158	221								
80 ●	80	175	255								
100 ●	100	200	300								
125 ●	125	225	350								
160 ●	160	265	425								
200 ●	200	310	510								
CHT95-25 ●	25	130	155	95	58	M8	12	151	4000	6400	
38 ●	38	143	181								
50 ●	50	155	205								
63 ●	63	168	231								
80 ●	80	190	270								
100 ●	100	210	310								
125 ●	125	245	370								
CHT120-25 ●	25	140	165	120	75	M8	12	147	6500	10400	
38 ●	38	153	191								
50 ●	50	165	215								
63 ●	63	178	241								
80 ●	80	195	275								

● Without G1/8 side hole and groove / *Senza foro laterale G1/8 e scanalatura*

● Available on request / *Disponibili a richiesta*

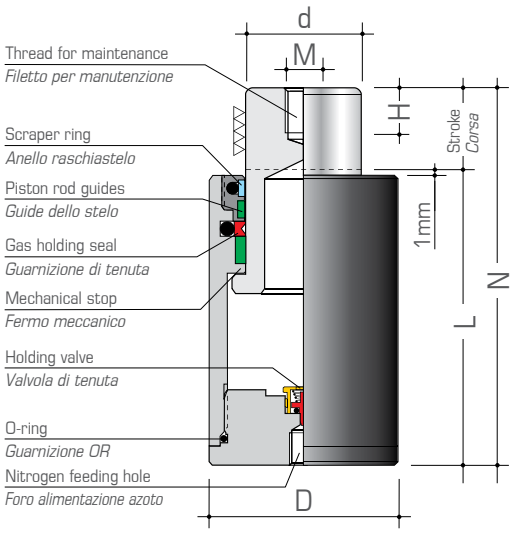
CSMHT

200°C
392°F
MAX TEMPERATURE

CSMHT compact series has been developed to work up to 200°C (392°F), for the most demanding high temperature applications.

La serie compatta CSMHT è stata sviluppata per lavorare fino a 200°C (392°F), per le più critiche applicazioni ad alta temperatura.

CSMHT



TECHNICAL NOTES

Important use instructions on pages 10 & 11

Different work strokes on request.

For accessories and other mountings, see the 'Accessories for nitrogen gas springs' catalogue.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10-11

Corse di lavoro diverse a richiesta.

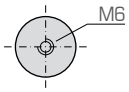
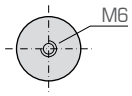
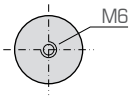
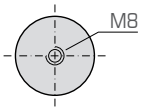
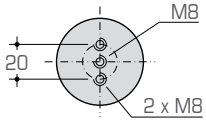
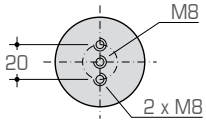
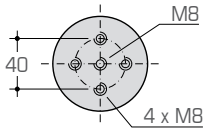
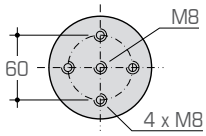
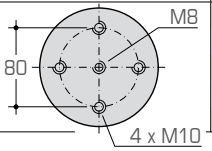
Per accessori e altri montaggi, consultare il catalogo 'Accessori per cilindri all'azoto'.

How to order

IMPORTANT: it is necessary to contact our technical department in order to make sure that CSMHT gas springs are ok for the required application. Bordignon technical department will send you a dedicated form to be filled with the application data.

Esempio d'ordine

***IMPORTANTE**: è necessario contattare il nostro ufficio tecnico per assicurarsi che i cilindri CSMHT siano adatti per l'applicazione richiesta. Il reparto tecnico Bordignon vi invierà un apposito modulo da compilare con i dati dell'applicazione.*

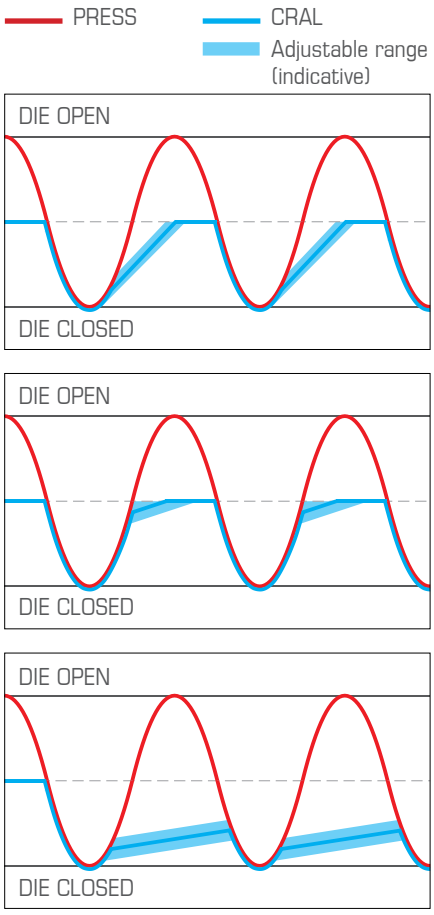
MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	M	H mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CSMHT19-10 ●	10	50	60	19	10	M5	7	128	100	160	
15 ●	15	55	70								
25 ●	25	65	90								
38 ●	38	78	116								
50 ●	50	90	140								
80 ●	80	120	200								
CSMHT25-10 ●	10	50	60	25	14	M6	8	129	200	320	
15 ●	15	55	70								
25 ●	25	65	90								
38 ●	38	78	116								
50 ●	50	90	140								
80 ●	80	120	200								
125 ●	125	165	290								
CSMHT32-10 ●	10	55	65	32	18	M8	12	137	350	560	
15 ●	15	60	75								
25 ●	25	70	95								
38 ●	38	83	121								
50 ●	50	95	145								
80 ●	80	125	205								
125 ●	125	170	295								
160 ●	160	205	365								
CSMHT38-10 ●	10	55	65	38	22	M8	12	131	500	800	
15 ●	15	60	75								
25 ●	25	70	95								
38 ●	38	83	121								
50 ●	50	95	145								
80 ●	80	125	205								
125 ●	125	170	295								
160 ●	160	205	365								
200 ●	200	245	445								
CSMHT50-10 ●	10	60	70	50	30	M8	12	141	1000	1600	
25 ●	25	75	100								
38 ●	38	88	126								
50 ●	50	100	150								
63 ●	63	113	176								
80 ●	80	130	210								
100 ●	100	150	250								
125 ●	125	190	315								
160 ●	160	235	395								
200 ●	200	275	475								
250 ●	250	325	575								
CSMHT63-10 ●	10	65	75	63	36	M8	12	147	1500	2400	
25 ●	25	80	105								
38 ●	38	93	131								
50 ●	50	105	155								
63 ●	63	118	181								
80 ●	80	135	215								
100 ●	100	160	260								
125 ●	125	190	315								
160 ●	160	235	395								
200 ●	200	275	475								
CSMHT75-10 ●	10	65	75	75	45	M8	12	157	2500	4000	
25 ●	25	80	105								
38 ●	38	93	131								
50 ●	50	105	155								
63 ●	63	118	181								
80 ●	80	135	215								
100 ●	100	155	255								
125 ●	125	200	325								
160 ●	160	250	410								
200 ●	200	300	500								
CSMHT95-25 ●	25	90	115	95	58	M8	12	151	4000	6400	
38 ●	38	103	141								
50 ●	50	115	165								
63 ●	63	128	191								
80 ●	80	155	235								
100 ●	100	185	285								
125 ●	125	220	345								
CSMHT120-25 ●	25	100	125	120	75	M8	12	147	6500	10400	
38 ●	38	113	151								
50 ●	50	125	175								
63 ●	63	138	201								
80 ●	80	160	240								

● Available on request / *Disponibili a richiesta*

Other series

Nitrogen gas springs for dies / *Cilindri all'azoto per stampi*

DIFFERENT CRAL TYPES / Working examples
DIVERSI TIPI DI CRAL / Esempi di funzionamento



CRAL

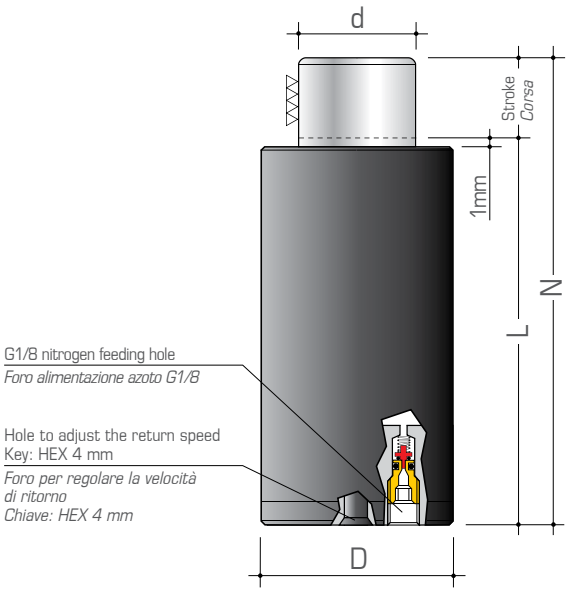
Slow-return self-contained gas springs, with adjustable return speed.

PATENT PENDING

Cilindri autonomi a ritorno rallentato, con velocità di ritorno regolabile.

PATENT PENDING

CRAL



TECHNICAL NOTES

Important use instructions on pages 10 & 11

The slow-return stroke length can be adjusted with the screw at the gas spring bottom.

USE INSTRUCTIONS FOR CRAL GAS SPRINGS ARE PROVIDED WITH THE PRODUCT.

How to order

IMPORTANT: it is necessary to contact our technical department in order to make sure that CRAL gas springs can be used in the required application. Bordignon technical department will send you a dedicated form to be filled with the application data.

NOTE TECNICHE

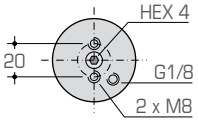
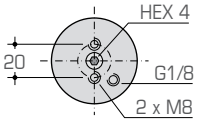
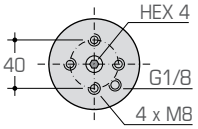
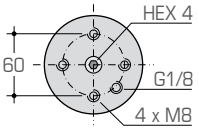
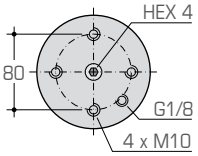
Importanti istruzioni d'uso alle pagine 10-11

La lunghezza della corsa frenata sul ritorno è regolabile con la vite alla base del cilindro.

LE ISTRUZIONI D'USO PER I CILINDRI CRAL SONO FORNITE CON IL PRODOTTO.

Esempio d'ordine

***IMPORTANTE**: è necessario contattare il nostro ufficio tecnico per assicurarsi che i cilindri CRAL siano adatti per l'applicazione richiesta. Il reparto tecnico Bordignon vi invierà un apposito modulo da compilare con i dati dell'applicazione.*

MODEL *MODELLO*	MAX STROKE mm *CORSA MAX* mm	L mm	N mm	D mm	d mm	bar	daN	daN	GAS SPRING BASE *BASE DEL CILINDRO*
CRAL50-10 ●	10	95	105	50	30	141	1000	1600	
25 ●	25	110	135						
38 ●	38	123	161						
50 ●	50	135	185						
63 ●	63	148	211						
80 ●	80	165	245						
100 ●	100	195	295						
CRAL63-10 ●	10	95	105	63	36	147	1500	2400	
25 ●	25	110	135						
38 ●	38	123	161						
50 ●	50	135	185						
63 ●	63	148	211						
80 ●	80	165	245						
100 ●	100	185	285						
CRAL75-10 ●	10	105	115	75	45	157	2500	4000	
25 ●	25	120	145						
38 ●	38	133	171						
50 ●	50	145	195						
63 ●	63	158	221						
80 ●	80	175	255						
100 ●	100	200	300						
CRAL95-25 ●	25	130	155	95	58	151	4000	6400	
38 ●	38	143	181						
50 ●	50	155	205						
63 ●	63	168	231						
80 ●	80	190	270						
100 ●	100	210	310						
CRAL120-25 ●	25	140	165	120	75	147	6500	10400	
38 ●	38	153	191						
50 ●	50	165	215						
63 ●	63	178	241						
80 ●	80	195	275						
100 ●	100	215	315						

● Available on request / *Disponibili a richiesta*

OV

Valveless nitrogen gas springs for dies,
for an alternative manifold connection:

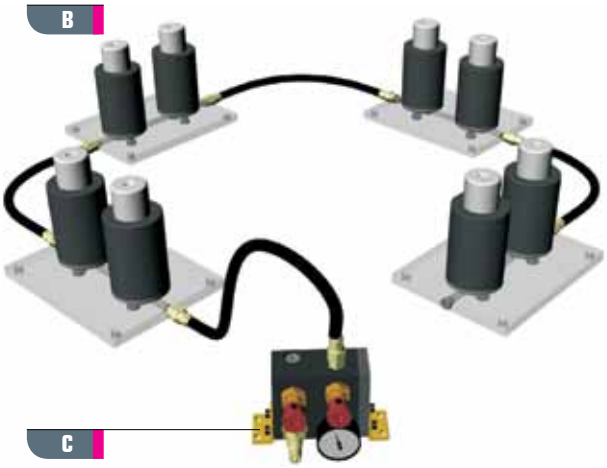
- use of standard gas springs, fast delivery!
- lower manufacturing and maintenance costs than traditional manifold plates and dedicated manifold gas springs;
- more compact plate dimensions;
- simple gas spring fixing with through-plate screws;
- OV gas springs available strokes, dimensions, and the other specifications not listed on page 49, are the same as the corresponding standard models (example: SMLXOV38-50 unlisted specifications as SMLX38-50).

Cilindri all'azoto senza valvola per stampi,
per una connessione manifold alternativa:

- *uso di cilindri standard, rapida consegna!*
- *costi di produzione e manutenzione più contenuti rispetto a piastre manifold tradizionali e cilindri manifold dedicati;*
- *dimensioni delle piastre più contenute;*
- *semplice fissaggio dei cilindri con viti attraverso la piastra;*
- *corse disponibili, dimensioni, e le altre specifiche dei cilindri OV non elencate a pagina 49, sono le stesse dei rispettivi modelli standard (esempio: per le specifiche non elencate del modello SMLXOV38-50, vedere il modello SMLX38-50).*

A

B



C

USE EXAMPLES / TECHNICAL NOTES

A OV valveless gas springs fixed on a single low-thickness plate, without connection tubes.

B OV valveless gas springs fixed on smaller plates connected by tubes.

C For accessories see the 'Accessories for nitrogen gas springs' catalogue.

Important use instructions on pages 10 & 11

ESEMPI D'USO / NOTE TECNICHE

A Cilindri senza valvola OV fissati ad una singola piastra di spessore contenuto, senza tubi di collegamento.

B Cilindri senza valvola OV fissati a piastre più piccole collegate con tubi.

C Per gli accessori consultare il catalogo 'Accessori per cilindri all'azoto'.

Importanti istruzioni d'uso alle pagine 10 e 11

How to order

8 CSMOV50-10 1500daN
No. 8 valveless nitrogen gas springs CSMOV ø 50 mm, stroke 10 mm, max initial force 1500 daN (new model), with OR 2021.

8 SMLXOV50-10
No. 8 valveless nitrogen gas springs SMLXOV ø 50 mm, stroke 10 mm, max initial force 1500 daN, with OR 114 and bonded seal 764 for special screw.

PRICE ON REQUEST

Esempio d'ordine

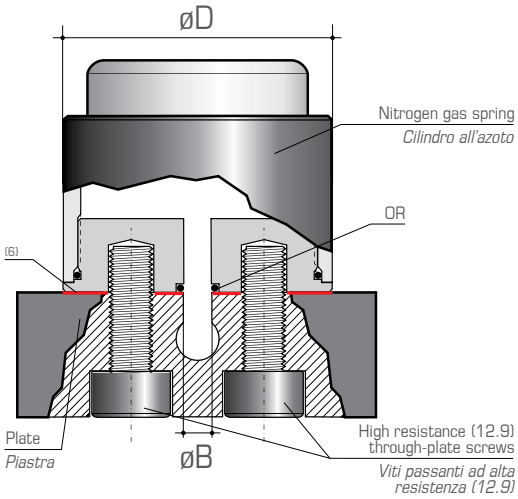
8 CSMOV50-10 1500daN
N° 8 cilindri all'azoto senza valvola CSMOV ø 50 mm, corsa 10 mm, massima forza iniziale 1500 daN (nuovo modello), con OR 2021.

8 SMLXOV50-10
N° 8 cilindri all'azoto senza valvola SMLXOV ø 50 mm, corsa 10 mm, massima forza iniziale 1500 daN, con OR 114 e rondella di tenuta 764 per vite speciale.

PREZZO A RICHIESTA

MULTIPLE-THREAD GAS SPRING FIXING

FISSAGGIO DI CILINDRI CON PIÙ FORI FILETTATI

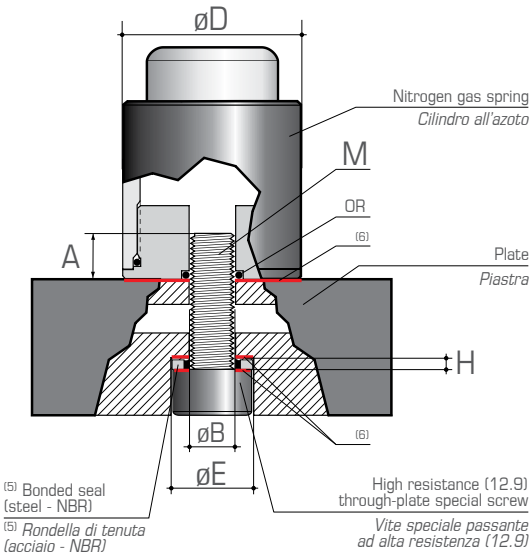


MODEL *MODELLO*	Ø B[3] MAX mm	Ø D[4] MIN mm	OR 90 Sh. A
CSXOV32- ... ●	2.5	32	2015
38- ... ●	3	38	2021
50- ... ●	3	50	2021
63- ... ●	3	63	2021
75- ... ●	4	75	3030
95- ... ●	4	95	3030
CSMOV50- ... ●	3	50	2021
63- ... ●	3	63	2021
75- ... ●	4	75	3030
95- ... ●	4	95	3030
120- ... ●	4	120	3030

● One OR is supplied with each nitrogen gas spring / *Con ogni cilindro è fornito un OR*

SINGLE-THREAD GAS SPRING FIXING

FISSAGGIO DI CILINDRI CON SINGOLO FORO FILETTATO



MODEL *MODELLO*	M[1]	A[2] ($^{+1}_{+0}$) mm	Ø B[3] MAX mm	Ø D[4] MIN mm	Ø E[4] MIN mm	H mm	OR 90 Sh. A	BONDED SEAL[5]
CSMOV19- ... ●	M6	9	6	19	12	1.5	2031	864
SMLXOV25- ... ●	M6	9	6	25	12	1.5	2031	864
32- ... ●	M6	9	6	32	12	1.5	106	864
38- ... ●	M8	12	8	38	15	2	2043	763
50- ... ●	M10	15	10	50	18	2	114	764
75- ... ●	M12	18	12	75	21	2	2056	765
95- ... ●	M12	18	12	95	21	2	2056	765

● One OR and one bonded seal is supplied with each nitrogen gas spring / *Con ogni cilindro è fornito un OR e una rondella di tenuta*

TECHNICAL NOTES

1) Special screw thread.
2) Special screw screwing depth inside the gas spring.
3) Plate hole maximum diameter.
4) Minimum finished surface area diameters for seals/plate coupling.
5) Steel - NBR bonded seals.
6) RED LINES IN THE DRAWINGS SHOW THE SURFACES TO BE FINISHED (GRINDED) FOR SEALS/PLATE COUPLING.

NOTE TECNICHE

1) Filetto della vite speciale.
2) Profondità di avvitamento della vite speciale all'interno del cilindro.
3) Diametro massimo foro piastra.
4) Diametri minimi delle aree ad alta finitura per l'accoppiamento guarnizioni/piastra.
5) Rondelle di tenuta in acciaio - NBR.
6) LE LINEE ROSSE NEI DISEGNI RAPPRESENTANO LE SUPERFICI DA RETTIFICARE PER L'ACCOPPIAMENTO GUARNIZIONI/PIASTRA.

EG

The EG lifters are charged with nitrogen gas. The charging pressure can be from the minimum of 20 bar to the maximum of 150 bar, with the corresponding forces shown in the table. Any intermediate force can be requested with the order, thus receiving them charged and ready-to-use.

Gli EG sono espulsori caricati con azoto. La pressione di carico può essere compresa tra un minimo di 20 bar ed un massimo di 150 bar, con le forze corrispondenti come da tabella. Qualsiasi forza iniziale intermedia può essere richiesta nell'ordine, avendoli così già caricati e pronti per l'uso.

TECHNICAL NOTES

Important use instructions on pages 10 & 11

End-stroke force is 1.6 the initial force.

NOTE TECNICHE

Importanti istruzioni d'uso alle pagine 10-11

La forza a fine corsa è pari a 1,6 volte la forza iniziale.

How to order

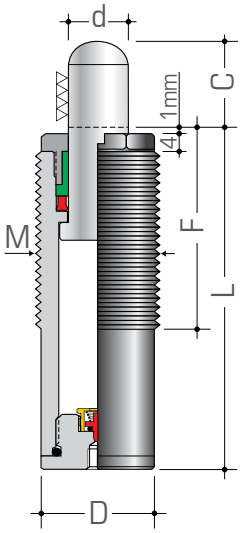
8 EG16-10 42daN

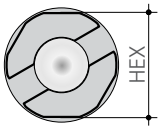
No. 8 nitrogen gas spring ejectors EG with threaded body M16 x 1.5, stroke 10 mm, initial force 42 daN

Esempio d'ordine

8 EG16-10 42daN

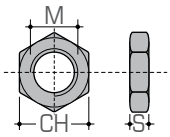
N° 8 espulsori a gas EG con corpo filettato M16 x 1.5, corsa 10 mm, forza iniziale 42 daN





MODEL *MODELLO*	C mm	L mm	d mm	F mm	D mm	M	HEX mm	daN 20bar	daN 150bar
EG16-10	10	70	6	40	14	M16x1.5	13	6	42
20	20	80							
30	30	90							
40	40	100							
50	50	110							
60	60	120							
70	70	130							
80	80	140							
100	100	160							
EG24-10	10	70	12	45	22	M24x1.5	19	23	170
20	20	80							
30	30	90							
40	40	100							
50	50	110							
60	60	120							
70	70	130							
80	80	140							
100	100	160							

Fastening nuts / *Dadi di fissaggio*



MODEL *MODELLO*	M mm	S mm	CH mm
EG-D-16	M16 x 1.5	8	24
EG-D-24	M24 x 1.5	10	36

Special key / *Chiave speciale*

MODEL *MODELLO*	FOR *PER*
EG-CH-16	EG16
EG-CH-24	EG24

Other series

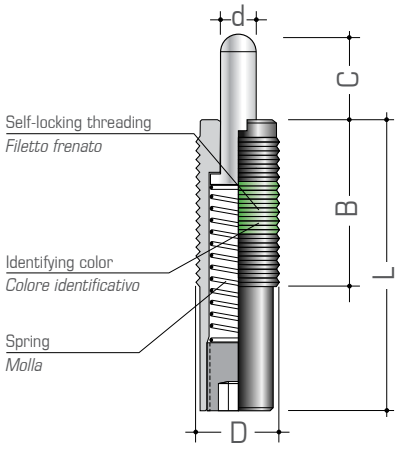
Wire spring ejectors for dies / *Espulsori a molla per stampi*

EM

The EM are wire spring ejectors. They have lower force than EG lifters.

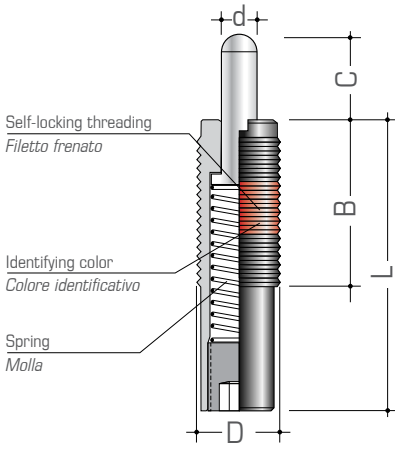
Gli EM sono espulsori a molla. Hanno forze inferiori agli espulsori a gas EG.

LIGHT FORCE SERIES *SERIE LEGGERA*



MODEL *MODELLO*	D	C mm	L mm	B mm	d mm	INITIAL FORCE *FORZA INIZIALE* daN	FINAL FORCE *FORZA FINALE* daN	SPECIAL KEY *CHIAVE SPECIALE*	
EM12-10G	M12	10	43	35	5.5	0.4	2	12	
EM16-10G	M16	10	60	35	7.5	1.3	4	16	
15G		15	60			1.0			
20G		20	80			1.3			
30G		30	125			1.8			
40G		40	150			1.3			
50G		50	150			1.3			
EM24-15G	M24	15	60	45	10	2.0	10	24	

HEAVY FORCE SERIES *SERIE FORTE*



MODEL *MODELLO*	D	C mm	L mm	B mm	d mm	INITIAL FORCE *FORZA INIZIALE* daN	FINAL FORCE *FORZA FINALE* daN	SPECIAL KEY *CHIAVE SPECIALE*	
EM12-10R	M12	10	43	35	5.5	0.7	4	12	
EM16-10R	M16	10	60	35	7.5	2.7	8	16	
15R		15	60			1.5			
20R		20	80			1.7			
30R		30	125			2.0			
40R		40	150			2.6			
50R		50	150			2.6			
EM24-15R	M24	15	60	45	10	4.0	20	24	

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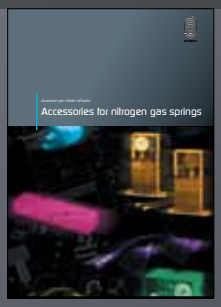
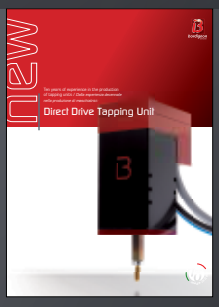
For gas spring accessories and other Bordignon high quality products, take a look at our other catalogues.

Per gli accessori per cilindri e altri prodotti di alta qualità Bordignon, consultate gli altri nostri cataloghi.



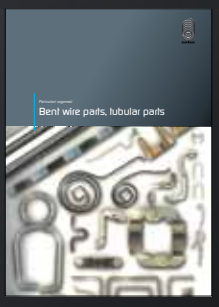
Accessories for nitrogen gas springs / *Accessori per cilindri all'azoto*

Booster for nitrogen
Booster per azoto



In-die tapping unit, out-die tapping unit / *Maschiatrice in e fuori stampo*

Air scrap remover
Evacuatore di sfrido ad aria



Bent wire parts, tubular parts / Particolari sagomati

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PED in accordance with 97/23/EC

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